harman/kardon

AVR45

A/V DOLBY DIGITAL RECEIVER

SERVICE MANUAL



The following marks found in the parts list of this manual Identify the models as follows:

- **BK** AVR 45 : North America area model Black version
- **IB** AVR 45 RDS : Europe area model Black version
- **AB** AVR 45 SNG : Asia area model Black version

CONTENTS

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Rev1 – 8/2005

ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field effect transistors and semiconductor "chip" components.

The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge build-up or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical change sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material.)
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

   CAUTION : Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together or your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES devices.

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing.

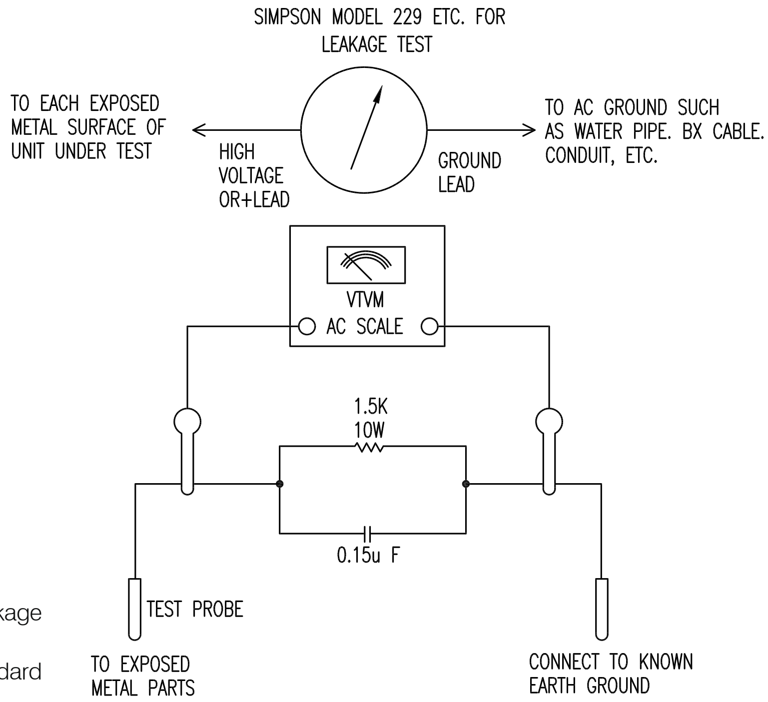
Components identified with the IEC symbol ⚠ in the parts list are special significance to safety. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings or resistance, wattage, or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before retuming the product to the customer.

LEAKAGE TEST(FOR SERVICE ENGINEERS IN THE U.S.A)

Before returning the unit to the user, perform the following safety checks :

1 Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the unit.

2. Be sure that any protective devices such as nonmetallic control knobs, insulating fish-papers, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacity networks, mechanical insulators, etc. Which were removed for the servicing are properly re-installed.



3. Be sure that no shock hazard exists ; check for leakage current using Simpson Model 229 Leakage Tester, standard equipment item No. 21641, RCA Model WT540A or use alternate method as follows : Plug the power cord directly Into a 120 volt AC receptacle (do not use an Isolation Transformer for this test). Using two clip leads, connect a 1500 ohms, 10watt Resistor paralleled by a 0.15uF capacitor, in series with all exposed metal cabinet parts and a known earth ground, such as a water pipe or conduit. Use a VTVM or VOM with 1000 ohms per volt, or higher sensitivity to measure the AC voltage drop across the resistor. (See diagram) Move the resistor connection to each exposed metal part having a return path to the chassis (antenna, metal, cabinet, screw heads, knobs and control shafts, escutcheon, etc.) and measure the AC voltage drop across the resistor. (This test should be performed with the 0.35 volt RMS or more is excessive and indicates a potential shock hazard which must be corrected before returning the unit to the owner.

AVR-45/45RDS/45SG

SPECIFICATIONS

FRONT AMP SECTION

	Nominal	Limit
Continuous Power Output		
(STEREO MODE), Input : CD	≥65W	≥60W
THD : 0.08%, 8 ohms		
Both Channel Driven(20Hz-20kHz)		
(SURROUND MODE)	≥55W	≥50W
THD : 0.5%, 8 ohms, 1kHz		
THD : at 60W, 8 ohms, Input : CD		
20Hz	≤0.03%	≤0.08%
1kHz	≤0.03%	≤0.08%
20kHz	≤0.03%	≤0.08%
IM Distortion at 70W, 8 ohms, Vol : Max.	≤0.03%	≤0.08%
Input Sensitivity for Rated Power Output(60W)		
CD/DVD/TAPE MONITOR	200mV	170～230mV
VID1/VID2/VID3	200mV	170～230mV
S/N Ratio Input Shorted at 1 kHz 1W Output(WTD IHF-A)		
CD	>82dB	
Tone Control		
Bass : 100Hz	+10dB	+10dB±3dB
	−10dB	−10dB±3dB
Treble : 10kHz	+10dB	+10dB±3dB
	−10dB	−10dB±3dB
Frequency Response at-3dB		
Mode : Stereo(1Watt)	10Hz-80kHz	10Hz-70kHz
Channel Crosstalk Input Shorted by 1 K Ohms		
100Hz	≥63dB	≥55dB
1kHz	≥63dB	≥55dB
10kHz	≥62dB	≥45dB

CENTER AMP SECTION

	Normal	Limit
RMS Output Power		
THD(0.5%, 8 ohms, 1kHz)		
All Channel Driven	≥55W	≥50W
S/N Ratio(Input Level : 200mV)		
Input Shorted, IHF-A WTD	≥65dB	≥60dB
Frequency Respones at-3dB		
8 ohms, Dolby Pro Logic	100Hz-20kHz	150Hz-20kHz

REAR AMP SECTION

	Normal	Limit
RMS Output Power		
THD(0.5%, 8 ohms, 1kHz)		
All Channel Driven	≥55W	≥50W
S/N Ratio(Input Shorted, IHF-A WTD)		
Delay : 20ms, Input Level : 200mV	≥65dB	≥60dB
Frequency Response at-3dB		
8 ohms, Dolby Pro Logic	100Hz-20kHz	150Hz-20kHz

SUB WOOFER SECTION

Line level at pre-out	
Surround mode : BYPASS(STEREO)	
Input Signal : L ch (only) 200mV	
Master Volume : +5dB	
Low pass crossover frequency	70Hz cut off
Slope (Low Pass Filter)	24dB/octave

VIDEO AMP SECTION

Input Sensitivify / Impedence		
VID1/VID2/VID3	1Vp-p/75	ohm +/−1dB
Output Level / Impedance		
VID1/VID2/VID3	1Vp-p/75	ohm +/−1dB
Frequency Response at-3dB	DC-8 MHz	DC-6 MHz

FM SECTION

Tuning Cover Range 100kHz Step for AVR-45	87.50-108.00MHz

Tuning Cover Range 50 kHz Step for AVR-45RDS/SG		
Mono Usable Sensitivity(75 ohms Input, 98MHz)		
	≤14.2dbf	≤17.2dbf
Image Rejection(at 98MHz)		
	≥80dB	≥70dB
IF Rejection(at 90MHz)	≥90dB	≥80dB
46dB Queting Sensitivity(at 98MHz, 100% MOD.)		
Stereo	≤39.2dbf	≤43.3dbf
Distortion(1kHz, 75kHz dev. At 98MHz, 71dbf Input)		
Mono	≤0.3%	≤0.5%
S/N Ratio(500uV Input, 100% MOD. At 98MHz)		
Stereo	≥65dB	≥60dB
Frequency Response(30Hz-15kHz)		
AVR-45 De-Emphasis : 75㎲	+0.5dB	+1.0dB
AVR-45RDS/SG De-Emphasis : 50㎲	−2.0dB	−4.0dB
AM Suppression at 98MHz	≥50dB	≥450B
Muting Threshold(at 98MHz)	31.2dbf	39.2dbf
Overload Break-up at 98 MHz	71dbf	65dbf
Capture Ratio at 65dbf	71dbf	65dbf
Stereo Separation(at 98MHz, 100% MOD, 500㎶ Input)		
IHF Band Pass Filter	≤2dB	≤2.5dB
1kHz	≥40dB	≥35dB
Tape out Level(at 98MHz)	500mV	350-650mV

AM SECTION

	Nominal	Limit
Tuning Cover Range(MW)		
AVR-45 : 10kHz/Step	520-1710kHz	
AVR-45RDS/SG : 9kHz Step	522-1611kHz	
Usable Sensitivity(MW, at 999 / 1000kHz)	≤500uV/m	≤1000uV/m
Image Rejection(at 999kHz)	≥40dB	≥30dB
IF Rejection(at 999/1000kHz)	≥50dB	≥45dB
AGC Figure of Merit(From 100mV/m at 999/1000kHz)		
	≥50dB	≥45dB
Distortion(999/1000kHz, 30% MOD, 50mV/m Input)		
	≤1.0%	≤2.0%
Frequency Response(999/1000Hz)		
At-3dB	100Hz-2.2kHz	150Hz-1.8kHz
Selectivity(999/1000Hz)		
9kHz/10kHz	≥30dB	≥25dB
S/N Ratio(999/1000kHz, With Antenna Input 5mV/m)		
	≥45dB	≥40dB
Overload Break-up at 999/1000kHz(THD 10%)		
	≥1000mV/m	≥500mV/m
Tape Output Level at 999/1000kHz(5mV/m Input)		
	200mV	160-240mV

GENERAL

Power Consumption	
At Rated Power All Channel Driven	332W
Idling at Minimum Volume Control	72W
Power Supplies :	
USA/Canada(AVR-65)	AC120V, 60Hz
Europe(AVR-65RDS/SG)	AC230V, 50Hz
Dimension(W x H x D)	
Inches	17.3×6.5×17.1
MM	440×165×435
Weight(lbs/kgs)	29/13.2

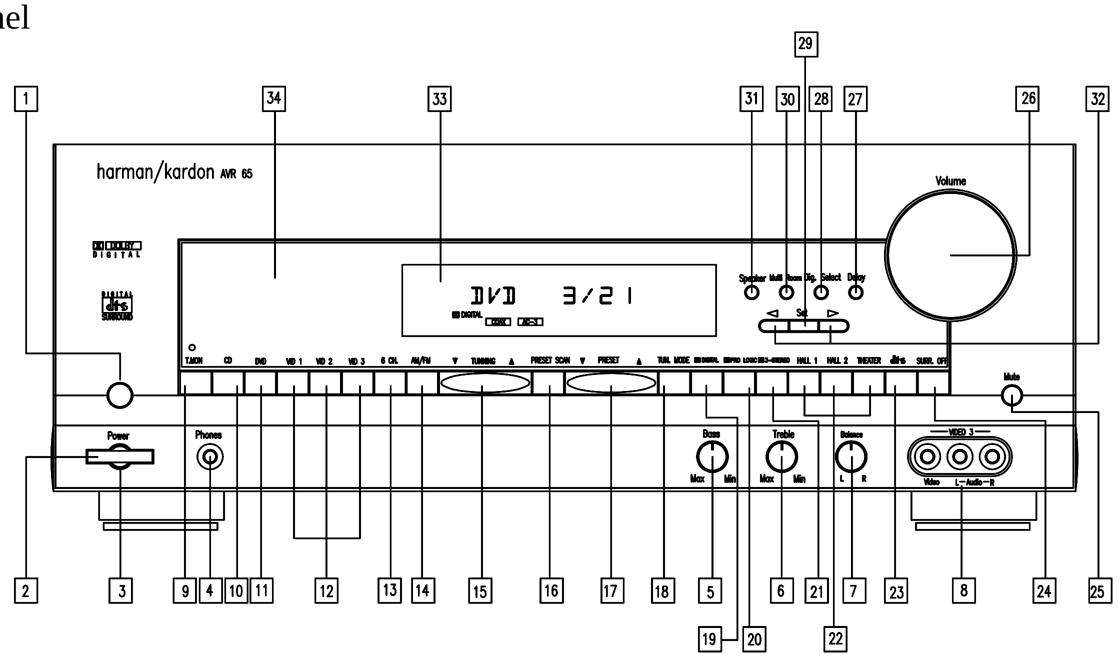
These specifications are service target specs.

specifications and components are subject to change without notice.

Overall performance will be maintained or improved.

CONTROLS AND FUNCTIONS

Front Panel



1 Main Power Switch : Press this button to apply power to the AVR-65.
When the switch is pressed in the unit is placed in a Standby mode, as indicated by the amber LED.
This button MUST be pressed in to operate the unit. To turn the unit off and prevent the use of the remote control, this switch should be pressed until it pops out from the panel so that the word "OFF" may be read at the top of the switch.

NOTE : In normal operation this switch is left in the "ON" position.

2 System Power Control : When the Main Power Switch **1** is "ON", press this button to turn on the AVR-65 ; press it again to turn the unit off. Note that the Power Indicator surrounding the switch **3** will turn green when the unit is on.

3 Power Indicator : This LED will illuminate in amber when the unit is in the Standby mode to signal that the unit is ready to be turned on. When the unit is in operation, the indicator will turn green.

4 Head Phone Jack : This jack may be used to listen to the AVR-65's output through a pair of headphones. Be certain that the headphones have a standard 1/4" stereo phone plug.

5 Bass Control : Turn this control to modify the lower frequency output of the left / right channels by as much as +/-10dB. Set this control to a suitable position for your taste and room acoustics.

6 Treble Control : Turn this control to modify the high frequency output of the left / right channels by as much as +/-10dB.
Set this control to a suitable position for your taste and room acoustics.

7 Balance Control : Turn this control to change the relative volume for the front left / right channels.

NOTE : For proper operation of the surround modes this control should be at the midpoint, or "12 o'clock" position.

8 Video 3 Inputs : These audio / video inputs may be used for temporary connection of video games, camcorder, digital still cameras or portable audio products. To select a source connected to these jacks, press the Video 3 Input Selector **12**.

9 T-Mon Selector : Press this button to select the device connected to the Tape Monitor jacks (24) as the listening source. The previously selected source will continue to show in the information Display **33** , and the red LED above the button will illuminate to remind you that you are listening to the tape monitor output.

10 CD : Press this button to select the device connected to the CD Input jacks (6) as the listening source.

11 DVD : Press this button to select the device connected to the DVD play jacks (7) as the listening and viewing source.

12 Video Input Selectors : Press one of these buttons to select a source connected to the rear panel Audio/Video inputs (3), (16), or the front panel Audio/Video input **8** .

13 6-Channel director Selector : Press this button to select the output of an optional, external 6-channel decoder connected to the 6 Ch Direct inputs (5) as the listening source.

14 AM/FM : Press this button to select the tuner as the AVR-65's input source. When it is first pressed the last station tuned will be heard. Press it again to change between AM and FM bands.

15 Tuning button : Press the left side of the button to tune lower frequency station and the right side of the button to tune higher frequency stations. When a station with a strong signal is tuned, the TUNED indicator **R** will illuminate in the Information Display **33** . A brief(1/2 second) press of the button will manually tune to the next frequency increment, while pressing and holding the button for a long period will automatically tune to the next station with a signal strong enough for acceptable reception.

16 Preset Scan : Press this button to automatically scan through the station that have been programmed in the AVR-65's memory. The tuner will play five seconds of each station before moving to the next preset station. To stop the scan when the desired station is heard, press the button again.

17 Preset Stations Selector : Press this button to select stations that have been entered into the preset memory.

18 TUN.MODE/RDS : Press this button to select the auto or mono mode for FM tuning. In the AUTO mode, AUTO indicator will illuminate in the information display, and when stations are transmitting stereo signals, the stereo reception will be provided and Stereo indicator will also be illuminated in the information display. In the MONO mode the left and right signals from stereo broadcasts will be mixed together and reproduced through all channels. Select MONO for better reception of weak signals.

19 Dolby Digital Selector : Press this button to select the Dolby Digital surround mode when listening to a program that carries the Dolby Digital surround mode when listening to a program that carries the Dolby Digital information.

20 Dolby Pro Logic Selector : Press this button to select the Dolby Pro Logic surround mode when listening to an analog or digital(PCM) program that is encoded with surround-sound information.

21 Dolby 3 Stereo Selector : Press this button to select the Dolby 3 Stereo listening mode. This mode is used primarily when a program has surround information when a center channel speaker, but no surround speakers, is installed.

22 Surround Mode Selectors : Press one of these buttons to select the analog surround modes. These modes may be used with any analog program source to create a pleasing surround effect.

23 DTS Selector : press this button to select DTS decoding when listening to an audio or video program that is encoded with DTS data.(See page 25 for more information on surround modes and digital audio.)

24 Surround Off : Press this button to turn off all surround processing, and to listen to a program in traditional stereo from the left front and right front speakers only.

25 Mute : Press this button to momentarily silence the speaker output of the AVR-65.

26 Volume Control : Turn the knob clockwise to increase volume, counter clockwise to decrease the volume.

27 Delay : Press this button to begin the sequence of steps required to enter delay time settings.

28 Digital Input Selector : When playing a source that has a digital output, press this button to select between the Optical (19) and Coaxial (18) Digital inputs.

29 Set Button : When making choices during the setup and configuration process, press this button to enter the desired setting, as shown in the information Display, into the AVR-65's memory.

30 Multi-room : Press this button to begin the process of selecting and configuring the AVR-65's output channels.

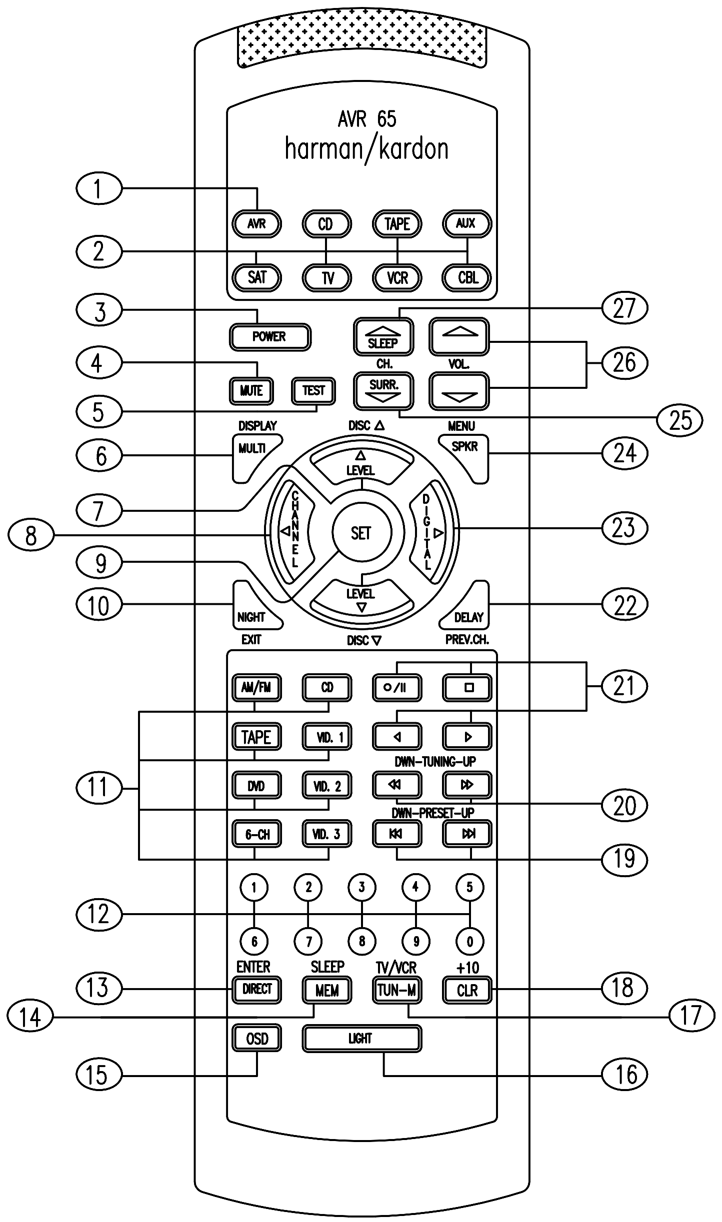
31 Speaker Selector Button : Press this button to begin the process of selecting the speaker positions that are used in your listening room.

32 Selector Buttons : When you are establishing the AVR-65's configuration settings, use these buttons to select between the choices available. as shown in the information Display **33**.

33 Information Display : This display delivers messages and status indications to help you operate the receiver.

34 Remote Sensor Window : The sensor behind this window receives infrared signals from the remote control. Aim the remote at this area and do not block or cover it unless an external remote sensor is installed.

Remote Control



❶ **AVR Selector :** Press this button to use the remote control for operation of the AVR-65. Note that the button will briefly turn red after it has been pressed to confirm your selection.

❷ **Device Control Selectors :** Press one of these button to use the remote to control the functions of another audio/video device. Note that the button will briefly turn red after it has been pressed to confirm your selection.

❸ **Power Button :** Press this button to turn the currently selected device on or off.

❹ **Mute :** Press this button to momentarily silence the AVR-65 or TV set being controlled, depending on which device has been selected.

❺ **Test :** Press this button to begin the sequence used to calibrate the AVR-65's output levels.

❻ **Display/Multiroom Button :** This button does not function with AVR-65, but it is available for use with other devices.

❼ **▲/▼ Buttons :** These are multi purpose buttons. They will be used most frequently to select a surround mode.

To change the surround mode, first press the **SURR/CH ▲/▼** button ㉕. Next press these buttons to scroll up or down through the list of surround modes that appear in the Information **Display** 33. These buttons are also used to increase or decrease output levels used to lower the AVR-65's output levels when configuring the unit with either the internal test tone or and external source. They are also used to enter delay time settings after the **Delay** button ㉒ has been pressed.

❽ **◀/▶ Channel Button :** This button is used to start the process of setting the AVR-65's output levels to an external source. Once this button is pressed, use the ▲/▼ buttons ❼ to select the channel being adjusted, then press the **Set** button ❾, followed by the ▲/▼ buttons again to change the level setting.

❾ **Set Button :** This button is used to enter settings into the AVR-65's memory. It is also used in the setup procedures for delay time, speaker configuration and channel output level adjustment.

❿ **Night Mode :** Press this button to activate the "Night" mode, preventing loud playback when the digital modes are in use without altering the dynamic range of the output signal.

When the AVR-65 remote is being programmed to operate other devices, this button is pressed to begin a readout of a programmed code.

⓫ **Source Selectors :** Press these buttons to select an input source for the AVR-65. The AM/FM button is also used to switch between frequency bands when the tuner in use.

NOTE : Pressing one of these buttons selects the source only. In order to control the actual source machine using the remote you must press the **Press Control Selector** button ❷ for the desired product.

⓬ **Numeric Keys :** These buttons serve as a ten-button numeric key-pad to enter tuner preset positions. They are also to be used to select channel numbers when TV has been selected on the remote, or to select track numbers on a CD, DVD or LD player, depending on how the remote has been programmed.

NOTE : The 0 button has a dual function. It also serves as the **CLEAR** button for use in programming the tuner or clearing the system memory.

⓭ **Direct/Enter :** Press this button to select a radio station by entering its frequency using the Numeric Key ⓬.

⓮ **Memory Button :** Press this button to enter a radio station into the AVR-65's preset memory. After pressing the button the **MEMORY** indicator N will flash, and you then have five seconds to enter a present memory location using the Numeric Keys ⓬.

NOTE : Although the word "Sleep" appears above this button, it refers to control of devices other than the AVR-65. Use the **Sleep** button ㉗ to control the AVR-65's Sleep function.

⓯ **OSD Button :** This button dose on screen display function with the AVR-65.

Semi → Full → OFF

⓰ **Light Button :** Press this button to activate the remote's built-in back-light for better legibility of the buttons in a darkened room.

⓱ **Tuner Mode :** Press this button when the tuner is in use to select between automatic tuning and manual tuning. When the button is pressed so that the **AUTO** indicator O goes out, pressing the **Tuning** buttons ⓴ will move the frequency up or down in single-step increments. When the FM band is in use, pressing this button when a station's signal is weak will change to monaural reception, as indicated by the **MONO** indicator Q.

⓲ **Clear Button :** This button dose not function with the AVR-65, but it is available for use with other devices.

⓳ **Press Up/Down :** When the tuner is in use, these buttons scroll through the stations that have been programmed into the AVR-65's memory, When many source devices, such as CD players, VCRs and cassette decks, are selected using the **Device Control Selectors** ❷. these buttons will normally function as chapter step or track advance.

⓴ **Tuning Up/Down :** When the tuner is in use, these buttons will tune up or down through the selected frequency band. If the **Tuner Mode** button ⓱ has been pressed so that the **AUTO** indicator O is illuminated, pressing these buttons will cause the tuner to seek the next station with acceptable signal strength for quality reception. When the **AUTO** indicator O is NOT illuminated, pressing these buttons will tune stations in single-step increments.

㉑ **Transport Control :** These controls do not control any function of the AVR-65, but they are used extensively when operating a wide variety of CD players, cassette decks and VCRs.

㉒ **Delay/Prev Ch. :** Press this button to begin the process for setting the delay times used by the AVR-65 when processing surround sound. After pressing this button the delay times are entered by pressing the **Set** button ❾, and then using ▲/▼ buttons ❼ to change the setting. Press the Set button again to complete the process.

㉓ **◀/▶ Digital Button :** This button is used to select the type of digital input used with any one of the input sources connected to the AVR-65. After pressing this button, use the ▲/▼ buttons (7) to make your selection between **OPTICA** E or **COAXIAL** G digital. Press the **Set** button ❾ to enter your choice.

㉔ **Speaker Configuration :** Press this button to begin the process of configuring the AVR-65's Bass Management System for use with the type of speaker used in your system. Once the button has been pressed, use the ▲/▼ buttons ❼ to select the channel you wish to set up. Press the **Set** button ❾, and then select another channel to configure. When all adjustments have been completed, press the Set button twice to exit the settings and return to normal operation.

㉕ **Surround Mode Selector :** Press this button to begin the process of changing the surround mode. After the button has been pressed, use the ▲/▼ buttons ❼ to select the desired surround mode. Note that this button is also used in the "Auto Search" process.

㉖ **Volume :** Press these buttons to raise or lower the system volume.

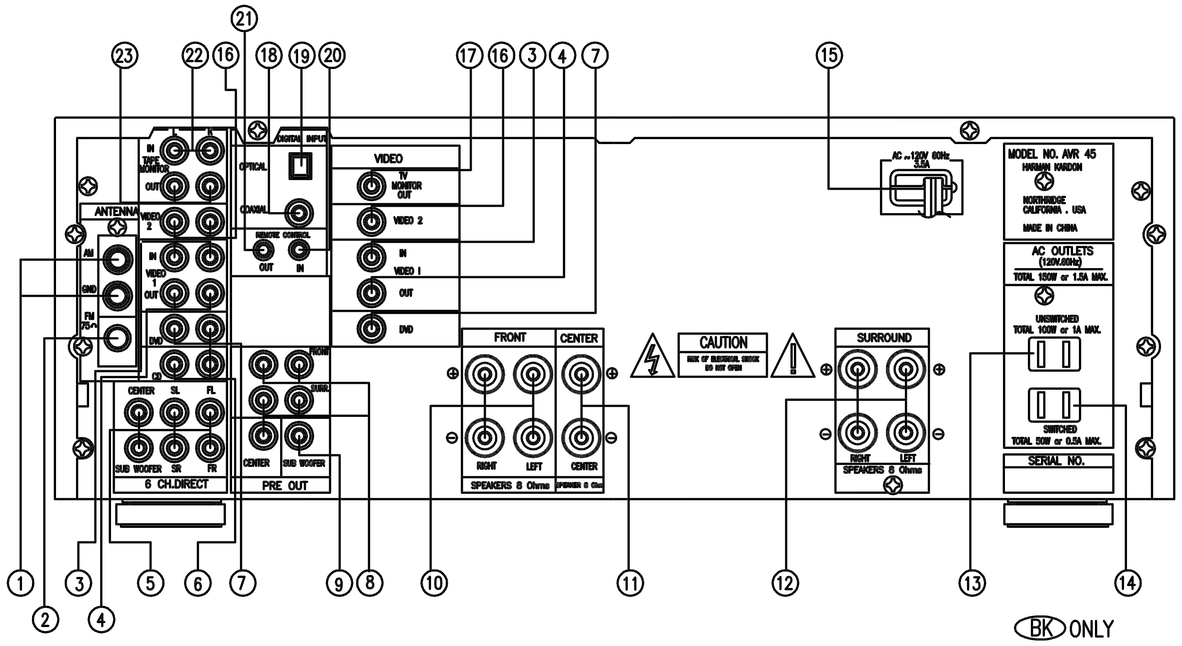
㉗ **Sleep Button :** Press this button to place the unit in the Sleep Mode. After the time shown in the display, the AVR-65 will automatically go into the standby mode. Each press of the button changes the time until turn-off in the following order:

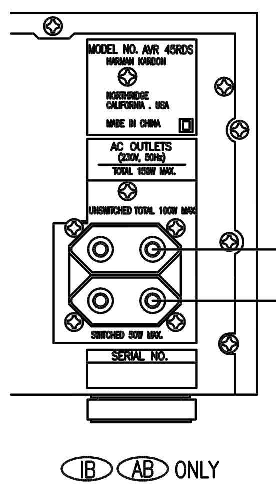
90 → 80 → 70 → 60 → 50 → 40

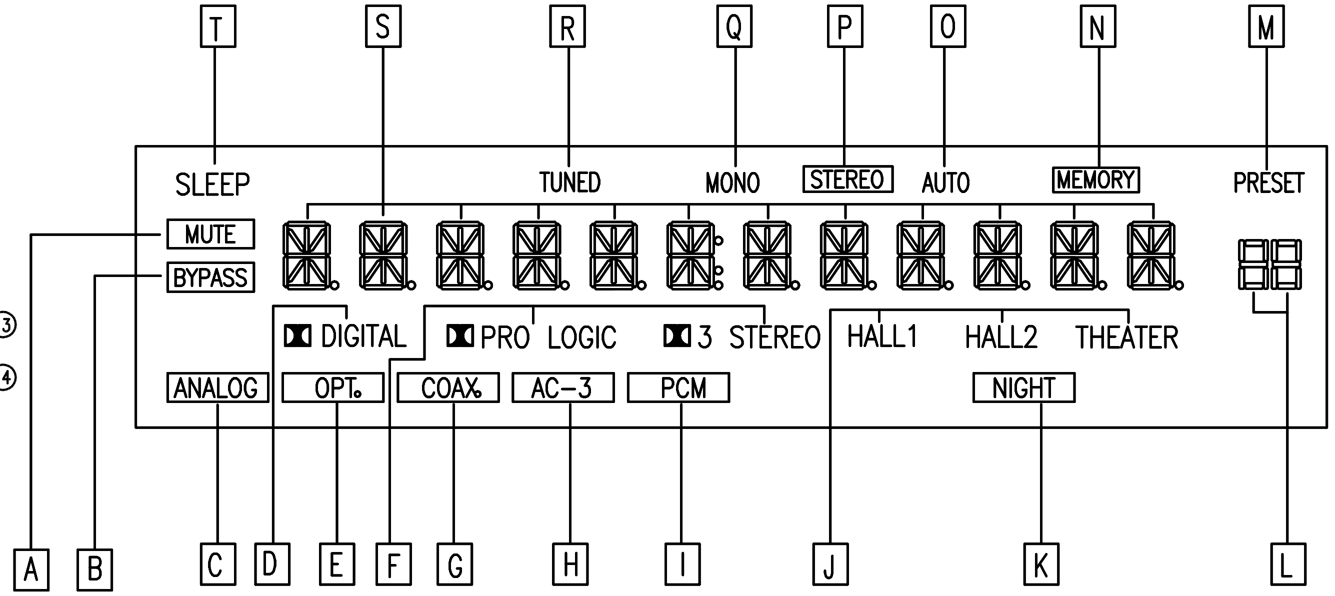
30 → 20 → 10 → 5 → 1 → OFF

Note that this button is also used to change channels on your TV when the TV is selected using the Devise Control Selector ❷.

When the AVR-65 remote is being programmed for the codes of another device, this button is also used in the "Auto Search" process.







1 AM Antenna : Connect the AM loop antenna supplied with the receiver to these terminals. If an external AM antenna is used, make connections to the AM and GND terminals in accordance with the instructions supplied with antenna.

2 FM Antenna : Connect an indoor or external FM antenna to this terminal.

3 Video 1 Input : Connect these jacks to the audio and video PLAY/OUT jacks of a VCR.

4 Video 1 Output : Connect these jacks to the audio and video RECORD INPUT jacks of a VCR.

5 6-Channel Direct Inputs : If an external digital audio decoder is used for 5.1(Dolby AT-3)audio, connect the outputs of that decoder to these terminals.

6 CD Inputs : Connect these jacks to the output of a compact disc player or CD changer.

7 DVD Inputs : Connect the analog audio outputs and composite video output of a DVD or LD player to these jacks.

8 Pre-Outs : If external power amplifiers are used for any channels, connect them to these jacks.

9 Subwoofer Pre-Out : Connect this jack to the line level input a powered subwoofer. If an external subwoofer amplifier is used, connect this jack to the subwoofer amplifier input.

10 Front : Connect these terminals to the front left/right speakers.

11 Center : Connect these terminals to the center speaker.

12 Surround : Connect these terminals to the surround speaker.

13 Unswitched AC Outlet : This outlet may be used to power any AC device. The power will remain on at this outlet regardless of whether the AVR-45 is on or not.

NOTE : The power consumption of the device plugged into each of these outlets should not exceed 100 watts.

14 Switched AC Outlet : This outlet may be used to power any device that you wish to turn on when the unit is turned on wiht the System Power Control switch. 2

15 Power Cable : Connect the AC plug to non-switched AC wall output.

16 Video 2 Inputs : Connect these jacks to the audio and video outputs of a TV Tuner. Cable TV converter box, satellite receiver of any other audio/video source.

17 TV Monitor Video Output : Connect this jack to the standard(composite) video input of a TV monitor or video projector to view the on-screen menus and the output of any standards video source selected by the receiver's video switcher.

18 AC-3/PCM Coaxial Input : Connect the coax digital output from a DVD player to this jack. The signal may be either a Dolby Digital (AC-3) signal or a standard PCM digital source.

19 AC-3/PCM Optical Input : Connect the optical digital output from a DVD player, HDTV receiver, LD player or CD player to this jack. The signal may be either a Dolby Digital (AC-3) signal or a standard PCM digital source .

20 Remote IR In : If the AVR-45's front panel IR sensor is blocked due to cabinet door or other obstructions, an external IR sensor may be used. Connect the output of the sensor to this jack.

21 Remote IR Out : This connection permits the IR sensor in the receiver to serve other remote controlled devices. Connect this jack to the "IR IN" jack on Harman Kardon or other compatible equipment.

22 Tape Monitor In : Connect these jacks to the PLAY/OUT jacks of an audio recorder.

23 Tape Monitor Out : Connect these jacks to the RECORD / INPUT jacks of an audio recorder.

A Mute : This indicator illuminates to remind you that the AVR 45's output has been silenced by pressing the Mute button 25.
Press the Mute button again to return to the previously selected output level.

B Bypass : This indicator illuminates when the surround processing has been disabled by pressing Surround Off button 24. When this indecator is it, the AVR-45 will play transitional stereo sound using the front left and right speakers only.

C Analog : This indicator illuminates when an analog input source is in use.

D Dolby Digital Indicator : This indicator illuminates when a Dolby Digital source is being played.

E OPT. : This indicator illuminates when a digital source is in use via a connection to the Optical Digital input 19.

F Dolby Pro-Logic Surround Mode Indicators : These indicators illuminate when one of the analog (matrix) or Digital(PCM) Dolby Surround modes is in use.

G COAX.Source : This indicator illuminates when a digital source is in use via a connection to the Coaxial Digital input 18.

H AC-3 Indicator : This indicator illuminates when a AVR-45 is decoding a Dolby Digital input source.

I PCM Indicator : This indicator illuminates to show that a standard PCM(SP/DIF) digital audio signal is being decoded by the digital-to-analog converter.

J Surround Mode Indicators : These indicators illuminate when one of the DSP generated analog surround modes is in use with an analog input source.

K Night Indicator : This indicator lights when the AVR-45 is in the Night mode, which prevents the AVR-45 from loud playback when digital sources are in use.

L Preset Number : This two-digit display indicates the station preset number that is currently in use, or of that is being entered.

M Preset Indicator : This indicator illuminates when one of the stations entered into the preset memory is tuned. The number that appears below the indicator is the preset station's memory.

N Memory : This indicator flashes when entering presets and other information into the tuner's memory.

O Auto : This indicator illuminates when the "Auto" mode is in use for FM tuning.

P Stereo Indicator : This indicator illuminates when an FM station is being tuned in stereo.

Q Mono Indicator : This indicator illuminates when the tuner has been placed in the monaural mode by pressing the FM **Mode** button 18. Set the tuner for mono listening to cut noise and improve the quality of distant stereo signals.

R Tuned Indicator : This indicator illuminates when a station is being received with sufficient signal strength to allow for acceptable listening quality.

S Main Information Display : This display shows messages relating to the status, input source, surround mode, tuner, volume level or other aspects of unit's operation.

T Sleep Indicator : This indicator is illuminated when the Sleep function is in use. The number that appears above the indicator is the number of minutes remaining before the AVR-45 will return to the Standby mode.

SERVICE PROCEDURE

1. All Clear

This service program can clear all memorized operations and functions.
When the POWER ON, press the "AM/FM" button while pressing the "PRO LOGIC"button.
After this, Preset memory will be set to these frequencies.

	VERSION	P1	P2	P3	P4	P5	P6	P7	P8
FM	120	87.5	88.0	90.0	95.0	98.0	99.0	106.0	108.0
	230,230RDS	87.50	88.00	90.00	95.00	98.00	99.00	106.00	108.00

	VERSION	P9	P10	P11	P12	P13	P14	P15
AM	120	520	600	610	1000	1400	1500	1710
	230,230RDS	522	594	999	1395	1611		

2. VFD segment illumination & text

This service procedure will illuminate all segments by the following steps
(1) Press the Power ON buttn(Push Knob) while you are holding the TEST TONE (dts) button.
(2) Then "TEST MODE" character will be shown on VFD Display.
(3) This set do not have Auto VFD segement check function. So For your checking the VFD states according to each function, Please press any function button which you want to test.
(4) for example : Tape monitor & CD
1) Press the POWER ON button(push knob) while you are holding the TEST TONE (dts) button.
2) Then "TEST MODE" character will be shown on VFD Display.
3) Press the t.MON button on Front, then you are able to see " TAPE MONITOR" Character on VFD Display.
4) Press the CD button on FRont, then you are able to see "CD" Character on VFD Display.

BUTTON	SEGMENT(Large)	SEGMENT(Small)
ST. POWER	POWER	
T. MON	TAPE MONITOR	
CD	CD	
DVD	DVD	
VID 1	VIDEO 1	
VID 2	VIDEO 2	
VID 3	VIDEO 3	
6 CH	6 CH DIRECT	
AM/FM	TUNER	TUNED, MONO, STEREO, AUTO, MEMORY, PRESET, 88
▼ TUNING	TUNING DOWN	
TUNING ▲	TUNING UP	
PRESET SCAN	PRESET SCAN	
▼ PRESET	PRESET DOWN	
PRESET ▲	PRESET UP	
TUN. MODE(RDS)	NO RDS	RDS, PTY, CT, RT
DIGITAL	DOLBY AC-3	DIGTAL, AC-3, NIGHT
PRO LOGIC	PRO LOGIC	PRO LOGIC, PCM
3 STEREO	3 STEREO	3-STEREO
HALL 1	HALL 1	HALL 1
HALL 2	HALL 2	HALL 2
THEATER	THEATER	THEATER
TEST TONE	TEST TONE	
SURR. OFF	SURR OFF	
SPEAKER	FRNT SPEAKER	
CHANNEL	FRONT L LEV	
DIG. SELECT	COAXIAL	ANALOG, OPT, COAX
DELAY	S DELAY TIME	
MUTE	MUTE	MUTE
VOLUME UP	VOLUME UP	
VOLUME DOWN	VOLUME DOWN	
SET	SET	
◀	COMM DOWN	
▶	COMM UP	

TEST EQUIPMENT REQUIRED

1) AM/FM Signal generator
2) Digital Multimeter
3) Distortion lever meter

ALIGNMENT PROCEDURES

1. FM MONO. Distortion adjustment

step	Input Signal Source Connection	Signal Frequency	Source Signal Output Level and Modulation	Reception Frequency	Adjustment Point	Adjustment Value
1	Signal generator output to FM antenna terminal.(750hm)	98MHz	1000uV/m (60dBu) MONO 1kHz/ Dev. 75kHz	98MHz (P5)	T804	0mV±0.5mV (R831)
2					T805	Distortion level **Minimum** at TAPE-OUT

2. FM MUTING LEVEL ADJUSTMENT

Turn variable resistor VR801 and stop at position "TUNED" is not shown (not indicated), then again turn the variable resistor VR801 to the opposite revolution and stop at a position "TUNED" is shown.

step	Input Signal Source Connection	Signal Frequency	Source Signal Output Level and Modulation	Reception Frequency	Adjustment Point	Adjustment Value
1	Signal generator output to FM antenna terminal.(750hm)	98MHz	10uV/m (20dBu) MONO 1kHz/ Dev. 75kHz	98MHz (P5)	VR801	"TUNED" indicate on VFD
2				AUTO SCAN	Only confirm	"TUNED" indicate on VFD

3. FM STEREO Separation Adjustment

step	Input Signal Source Connection	Signal Frequency	Source Signal Output Level and Modulation	Reception Frequency	Adjustment Point	Adjustment Value
1	Signal generator output to FM antenna terminal.(750hm)	98MHz	same specification as **FM STEREO** distortion adjustment. Input only L channel	98MHz (P5)	VR803	Output level **Minimum** at TAPE-OUT channel R
2			same specification as **FM STEREO** distortion adjustment. Input only R channel	98MHz (P5)	VR803	Output level **Minimum** at TAPE-OUT channel L

4. AM OSC Adujstment

step	Input Signal Source Connection	Signal Frequency	Source Signal Output Level and Modulation	Reception Frequency	Adjustment Point	Adjustment Value
1	Signal Generator output to transmission loop antenna (standard required loop)	522kHz (230,230RDS) 520kHz(120)	5mV/m(74dBu) 400Hz MOD.30%	522kHz (230,230RDS) 520kHz (120) (P9)	T802	1.1V～1.2V

5. AM-Tracking Adjustment (MW)

step	Input Signal Source Connection	Signal Frequency	Source Signal Output Level and Modulation	Reception Frequency	Adjustment Point	Adjustment Value
1	Signal Generator output to transmission loop antenna (standard required loop)	594kHz (230,230RDS) 600kHz(120)	5mV/m(74dBu) 400Hz MOD.30%	594kHz (230,230RDS) 600kHz(120)	T801	Output level(L or R) Minimum at TAPE-OUT
2		1395kHz (230,230RDS) 1400kHz(120)			CT801	Output level(L or R) Minimum at TAPE-OUT

6. AM IF Adjustment

step	Input Signal Source Connection	Signal Frequency	Source Signal Output Level and Modulation	Reception Frequency	Adjustment Point	Adjustment Value
1	Signal Generator output to transmission loop antenna (standard required loop)	999kHz (230,230RDS) 1000kHz(120)	5mV/m(74dBu) 400Hz MOD.30%	999kHz (230,230RDS) 1000kHz (120)	T803	Output level(L or R) Maximum at TAPE-OUT Output level(L or R) Maximum at TAPE-OUT

7. AM auto stop Adjustment

step	Input Signal Source Connection	Signal Frequency	Source Signal Output Level and Modulation	Reception Frequency	Adjustment Point	Adjustment Value
1	Signal Generator output to transmission loop antenna (standard required loop)	999kHz (230,230RDS) 1000kHz (120)	1000uV/m(60dBu) 400Hz MOD.30%	999kHz (230,230RDS) 1000kHz(120)	VR802	"TUNED" indicate on VFD
2				AUTO SCAN	Only Confirm	"TUNED" indicate on VFD

8. Main Amp Idling current Adjustment

1) Alignment condition

(1) Adjust each of the variable resistors below in both the main and surround boards to the center position :

MAIN AMP BOARD : VR401, VR402, VR501

SURROUND AMP BOARD : VR601, VR602

2) Warming up system

After he above adjustment, turn the power ON and let the receiver warm up for 5 minutes to achieve a stable temperature for the driver and power transistors.

3) Measurement condition

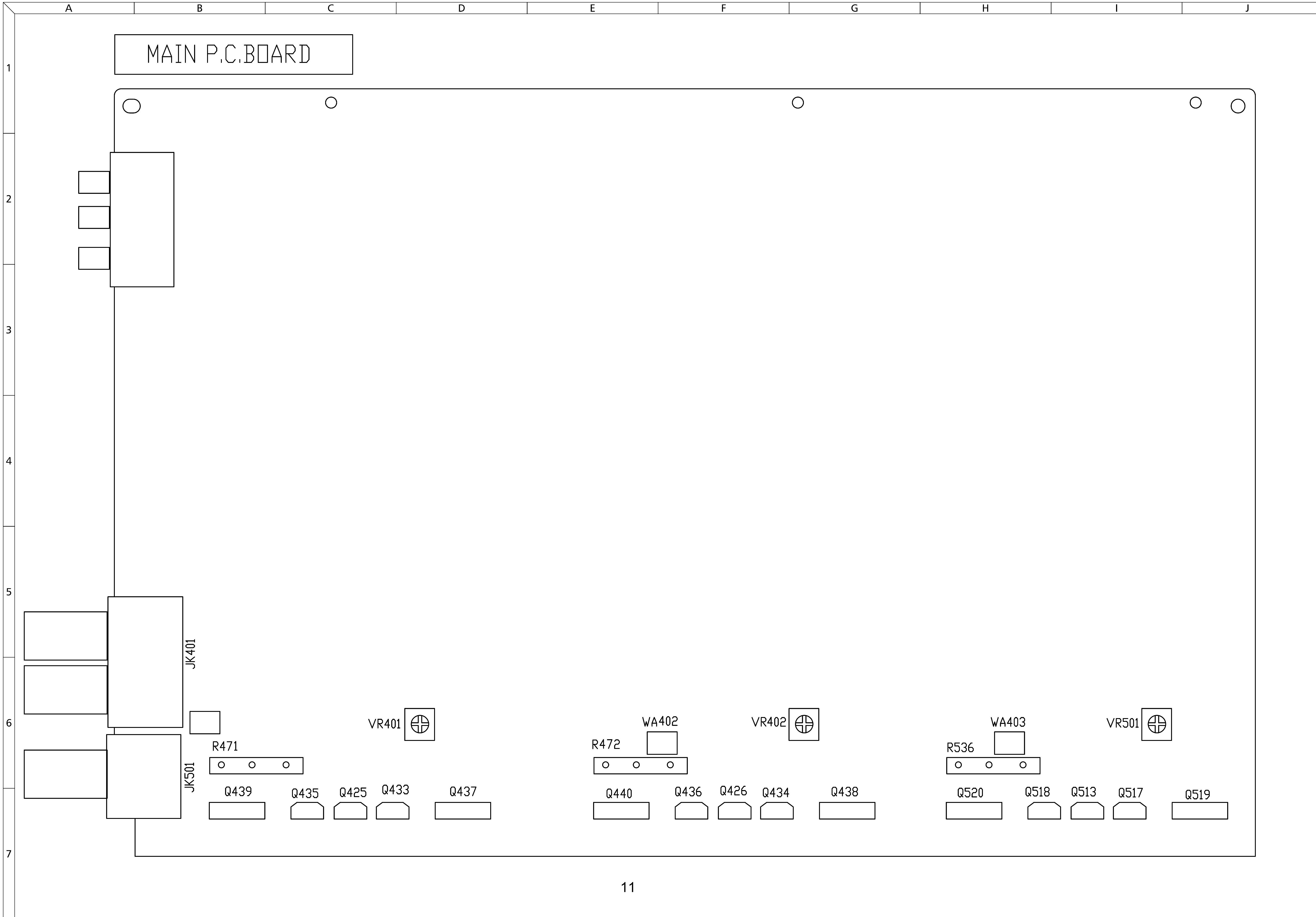
Adjust each variable resistor listed below clockwise for each channel, and adjust refer the following table for the details.

CHANNEL	ADJUSTING LOCATION	MEASURE LOC.	VOL. DROP
FRONT-L	VR401	R471	15mV±3mV
FRONT-R	VR402	R472	15mV±3mV
CENTER	VR501	R536	15mV±3mV
SURR-L	VR601	R671	15mV±3mV
SURR-R	VR602	R672	15mV±3mV

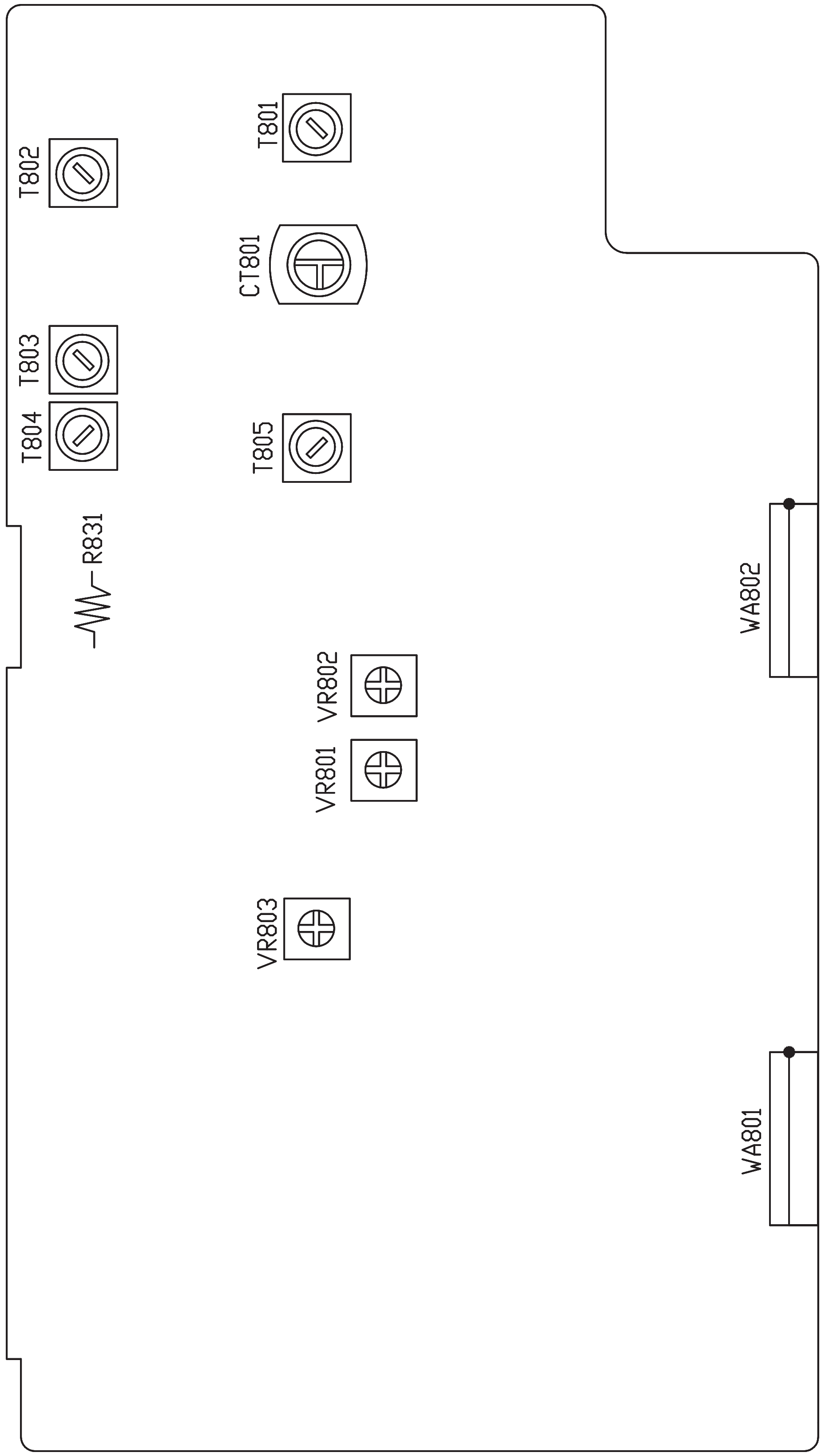
4) CAUTION

(1) whenever power or driver transistors are changed, after repair you must re-adjust the idle current for repair, have to re-adjust that idle current again.

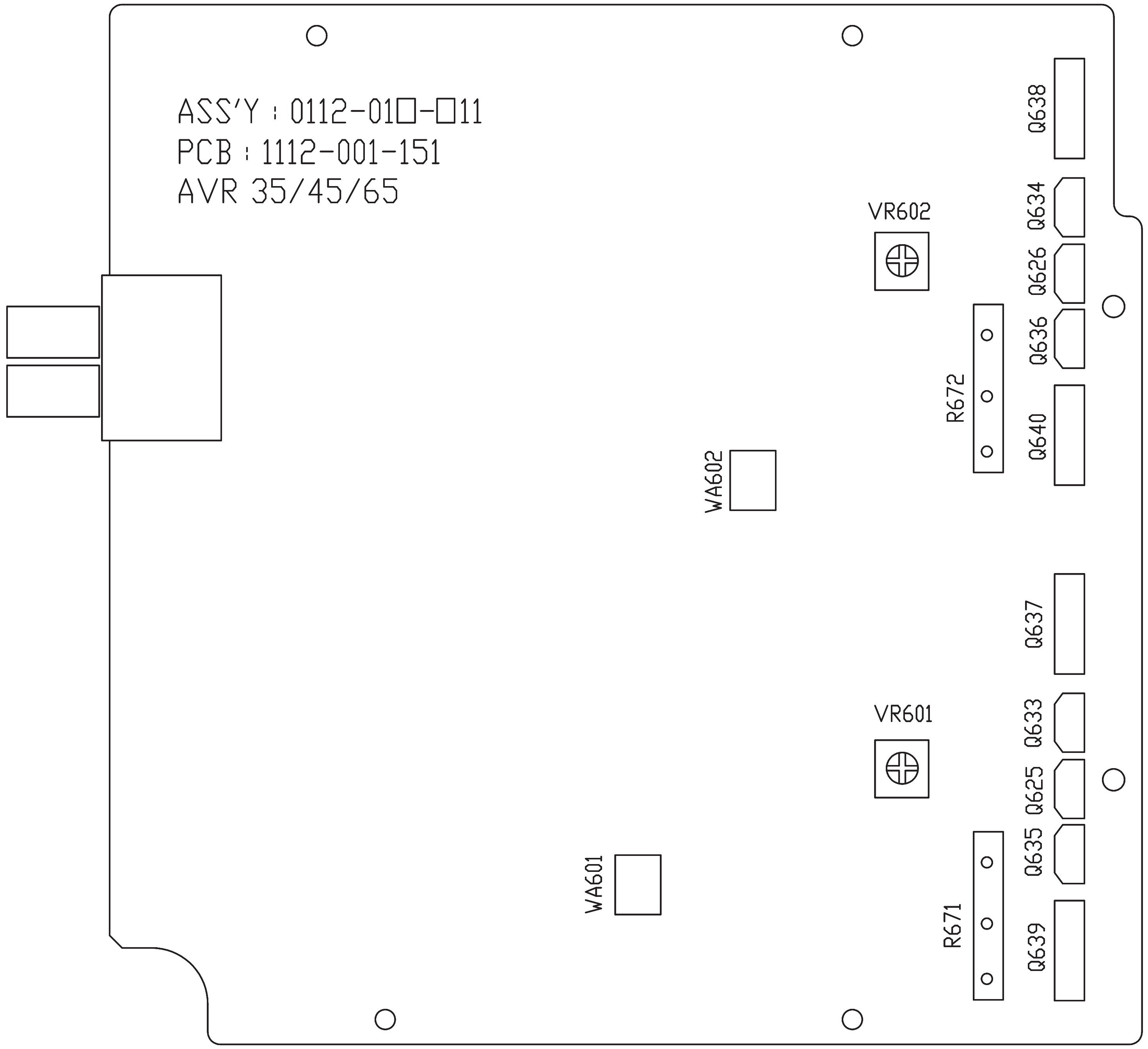
(2) Discharge each large elec. Capacitor C481, and C482(8200u) on main amp board, and C691, C692(6800uF/50V) on surround amp board.


A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
7
MAIN P.C.BOARD
JK401
JK501
VR401
R471
Q439
Q435
Q425
Q433
Q437
WA402
R472
Q440
VR402
Q436
Q426
Q434
Q438
WA403
R536
Q520
Q518
Q513
Q517
VR501
Q519

TUNER P.C.BOARD



SURROUND P.C.BOARD



CIRCUIT DESCRIPTION

1. SURROUND CIRCUIT

This model incorporates a surround processor circuit that provides 6 types of the surround sound and level trim and Bass management Fig–1 is a block diagram of the surround processor circuit.
The microprocessor transfers the data to the parameter control (int–req. serial data, Serial clock, Chip selector) to operate the circuits in each mode.

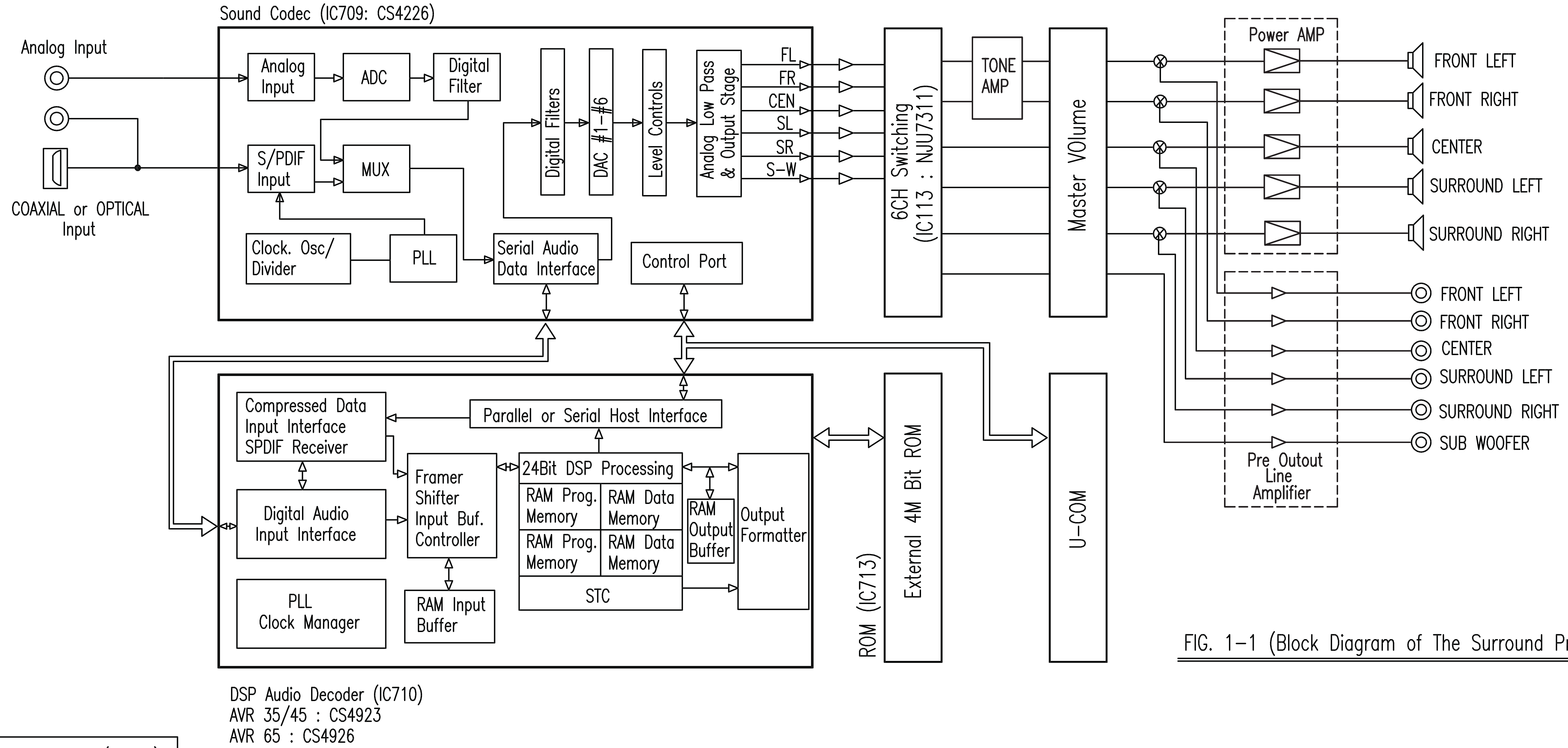


FIG. 1–1 (Block Diagram of The Surround Processor circuit)

2. DOLBY DIGITAL (AC–3)

Fig. 1–2 is a function block diagram of the application code when configured for Dolby Digital.
It gives an idea of the interaction between the various application modules when AC3 is enabled

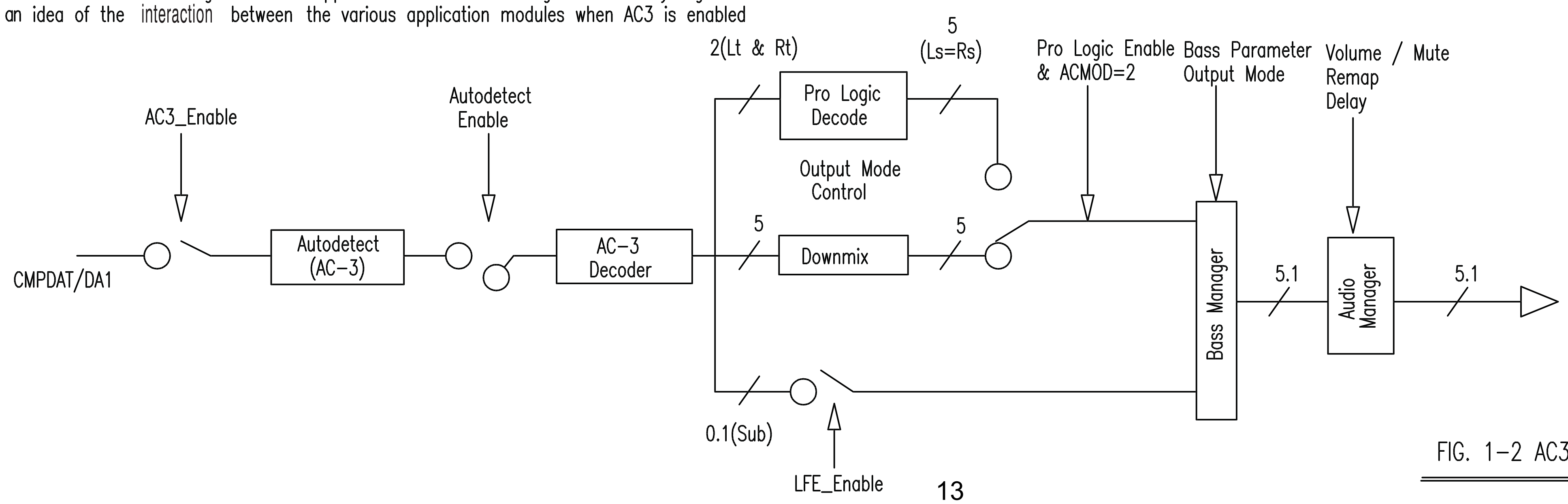


FIG. 1–2 AC3 Code Configured for AC3

A B C D E F G H I J

3. PCM Input (Dolby Pro-Logic, Dolby 3 Stereo)

Fig 1–3 is a function block diagram of the application code when configured for PCM pass–through.
It gives an idea of the interaction between the various application modules when PCM is enabled.

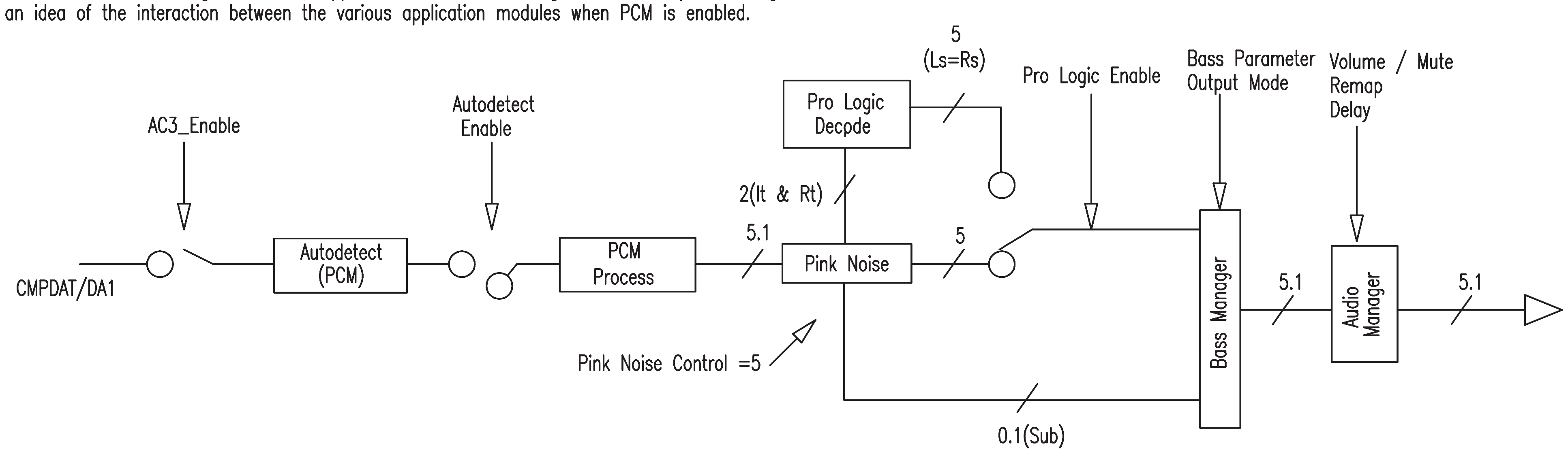


Fig 1–3 AC3 Code Configured for PCM

4. Sound Field Effect (Hall1, Hall2, Hall3)

Fig 1–4 is a function block diagram of the application when configured for Effects processing.
It gives an idea of the interaction between the various application modules when the effects are enabled.

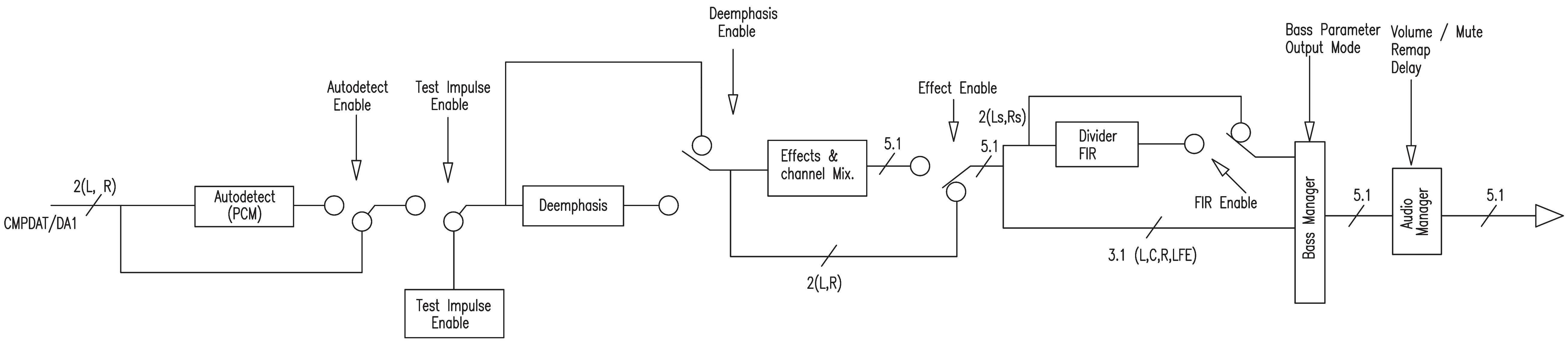


Fig 1–4 Effects Code Block Diagram

5. Bass Management

The Bass Manager is best described with the to use of a block diagram.
The default 3dB frequency for this filter is 100Hz.
Fig 1-5 shows the topology of the filters cascaded to implement a second order filter.
Depending on the cofficient values, either a second order low pass or second order high pass can be implement.
The corner frequency can be changed by downloading new values for the coefficients a1, b0 and b1.

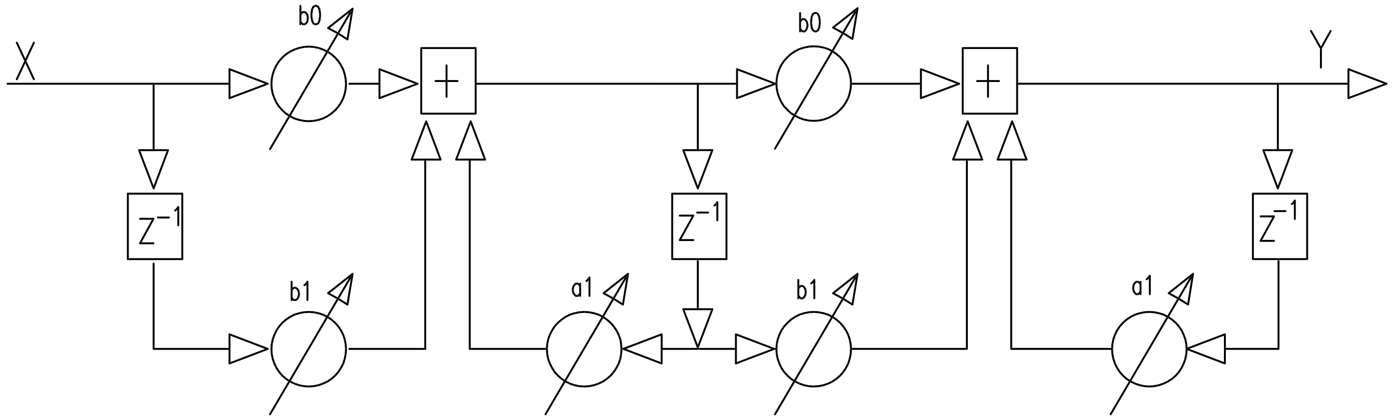


Fig 1-6 Filter Topology

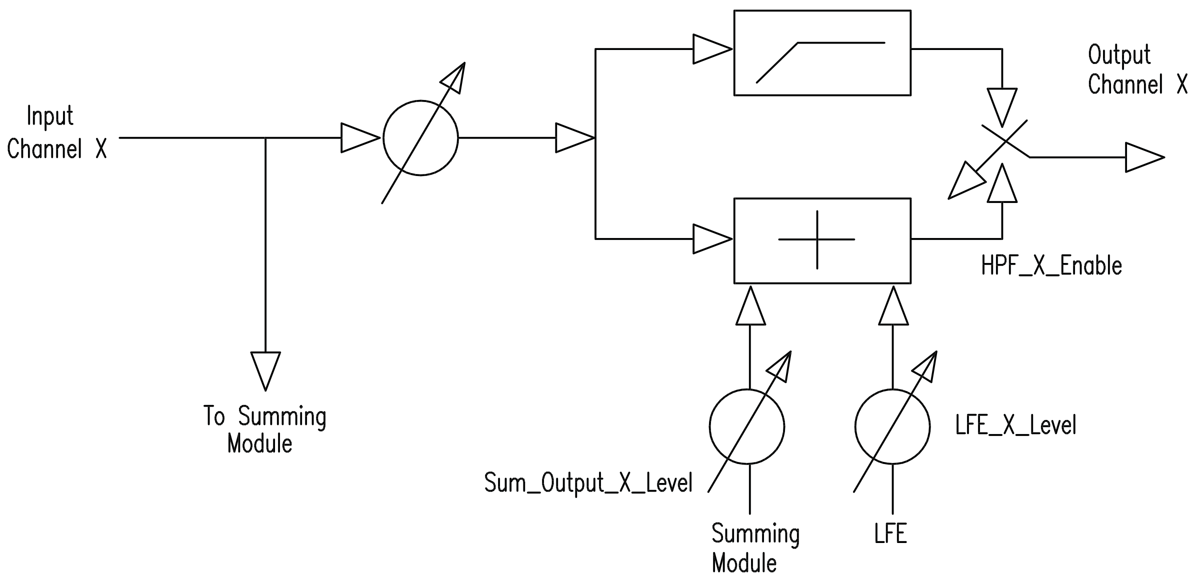


Fig 1-7 Bass manager Processing Unit

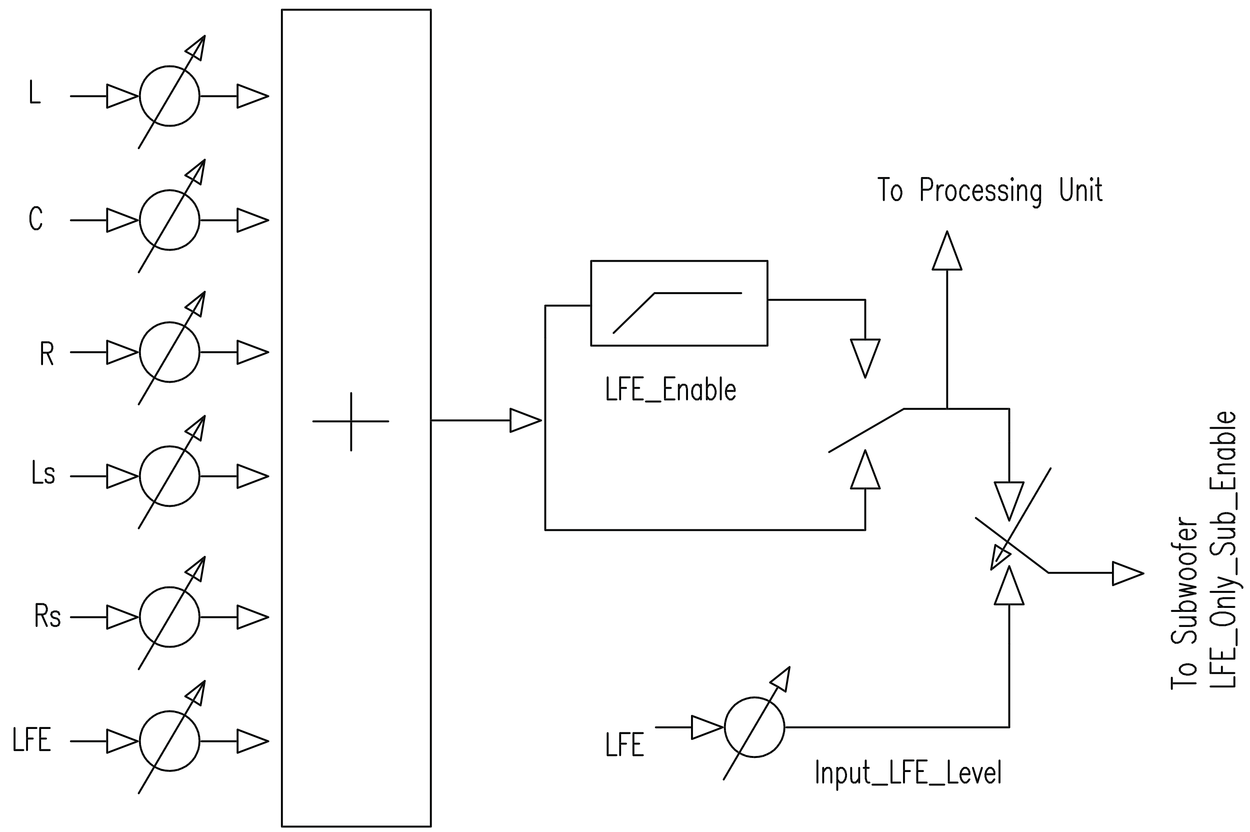
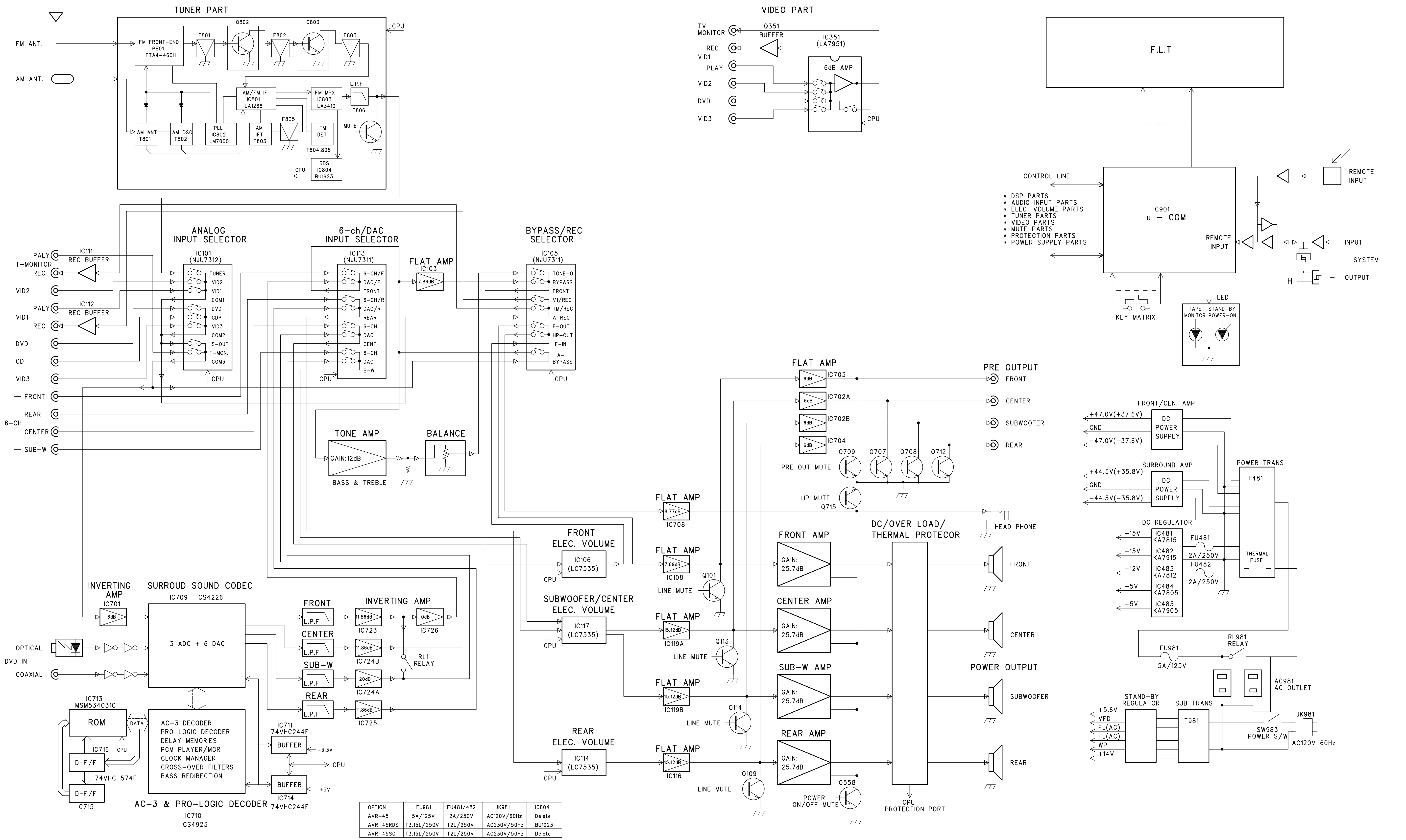


Fig 1-7 Bass manager Processing Unit

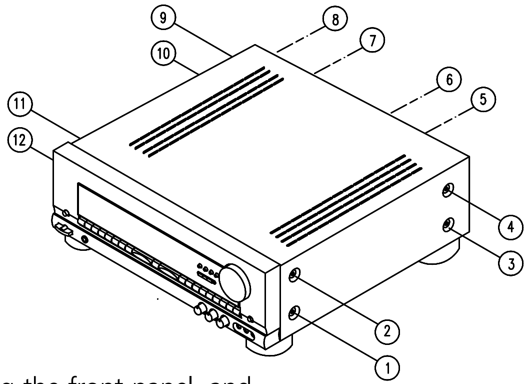
AVR–45/45RDS/45SG BLOCK DIAGRAM



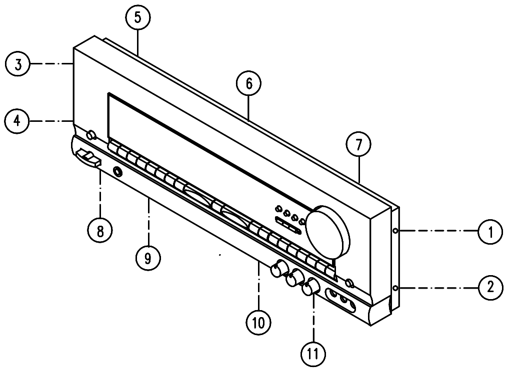
OPTION	FU981	FU481/482	JK981	IC804
AVR–45	5A/125V	2A/250V	AC120V/60Hz	Delete
AVR–45RDS	T3.15L/250V	T2L/250V	AC230V/50Hz	BU1923
AVR–45SG	T3.15L/250V	T2L/250V	AC230V/50Hz	Delete

DISASSEMBLY PROCEDURE

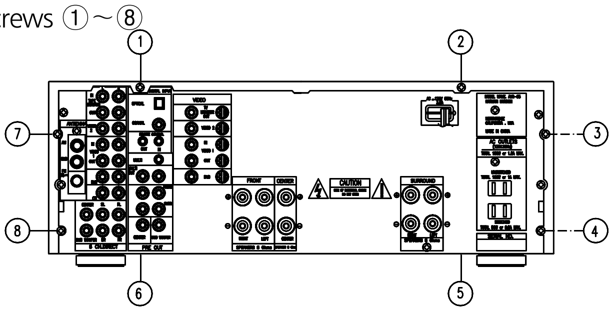
1. Removing the top cover, and
   Remove screws ①～⑫



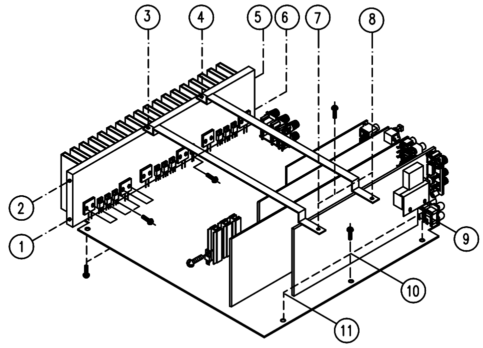
2. Removing the front panel, and
   Remove screws ①～⑪



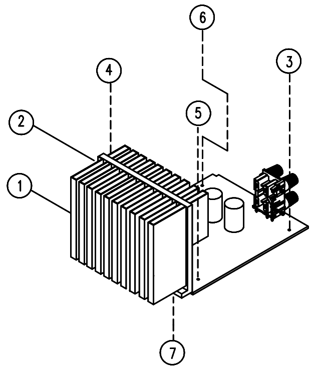
3. Removing the rear panel, and
   Remove screws ①～⑧



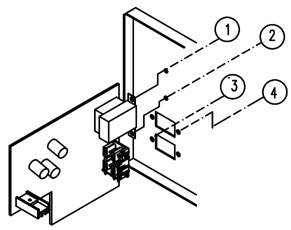
4. Removing the main PCB block, and
   Remove screws ①～⑪



5. Removing the power PCB block, and
   Remove ①～⑦



6. Removing the sub PCB block, and
   Remove screws ①～④



MAIN AMP PCB BLOCK

1. Remove all of the screws on Rear panel.
2. Remove the Rear panel.
3. Remove PCB Brk´t and Guide Brk´t from Main Ass´y.
4. Remove all of the screws that connect with main Ass´y.
5. Remove the Main PCB block.

POWER PCB BLOCK

1. Remove PCB Brk´t and Guide Brk´t from Main Ass´y.
2. Remove 4 screws for Power PCB mounting
3. Remove the POWER PCB block.

SUB PCB BLOCK

1. Remove 4 screws on Rear panel.
2. Remove the Rear panel.
3. Remove PCB Brk´t and Guide Brk´t from Main Ass´y.
4. Remove the SUB PCB block.

FRONT PCB BLOCK

1. Remove Main Ass´y.
2. Remove volume and rotary knob from the front Ass´y.
3. Remove all of the screws on back side of Front function PCB.
4. Remove the Front function PCB.

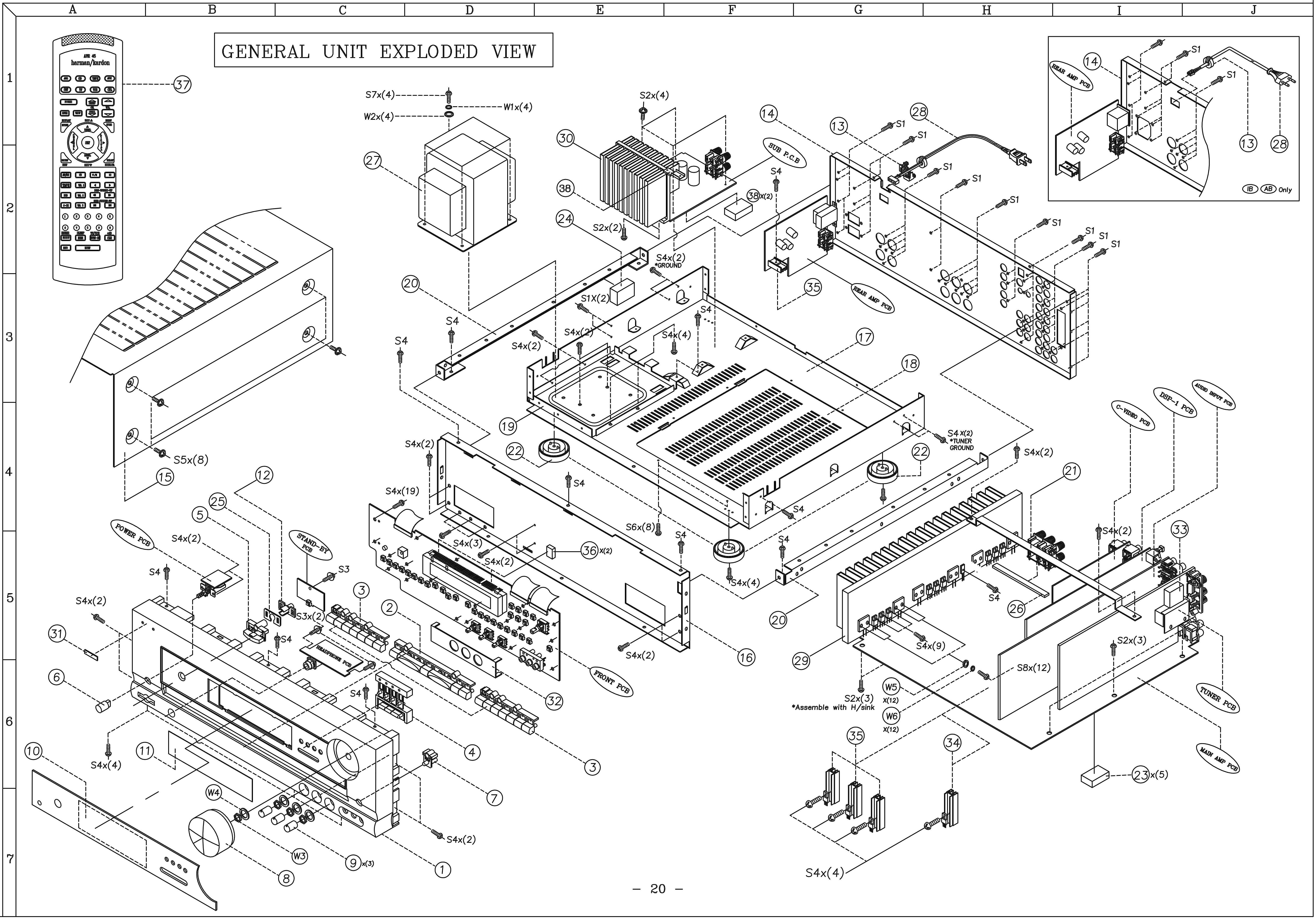
GENERAL UNIT PARTS LIST

REF NO.	PART NO.	DESCRIPTION	Q'TY
1	5111-005-010	PANEL. FRONT BK AB	1
1-A	5111-008-010	PANEL. FRONT IB	1
2	5131-003-010	KNOB. FUNCTION (A)	1
3	5131-003-020	KNOB. FUNCTION (B)	1
4	5131-003-030	KNOB. FUNCTION (C)	2
5	5131-003-040	KNOB. POWER	1
6	5131-003-050	KNOB. PUSH	1
7	5131-003-060	KNOB. TACT	1
8	5131-003-070	KNOB. VOLUME	1
9	5131-003-080	KNOB. ROTARY	3
10	5141-005-010	WINDOW. FRONT BK AB	1
10-A	5141-008-010	WINDOW. FRONT IB	1
11	5141-003-020	FILTER. WINDOW	1
12	5142-003-010	LENS. POWER	1
13	5179-000-060	BUSHING. STRAIN R	1
14	5212-005-010	PANEL. REAR BK	1
14-A	5212-008-010	PANEL. REAR IB	1
14-B	5212-011-010	PANEL. REAR AB	1
15	5213-003-010	COVER TOP	1
16	5214-003-010	CHASSIS. FRONT	1
17	5214-003-020	CHASSIS. MAIN	1
18	5214-003-030	COVER. BOTTOM	1
19	5214-003-040	TRANS. BOTTOM	1
20	5214-003-050	FRAME. GUIDE	2
21	5214-003-060	BRK'T. PCB	2
22	5283-003-010	FOOT ASS'Y	4
23	5451-003-010	CUSHION. PCB	5
24	5451-003-040	CUSHION (A)	1
25	5451-003-050	SHEET. POWER	1
26	5451-003-060	CUSHION. BRK'T	2
27	1419-000-003	TRANS. POWER BK	1
27-A	1419-001-003	TRANS. POWER IB	1
27-B	1419-002-005	TRANS. POWER AB	1
28	2161-000-032	CORD. POWER BK AB	1
28-A	2161-001-032	CORD. POWER IB	1
29	5241-003-010	HEAT SINK. MAIN	1
30	5241-003-020	HEATSINK. SUB	1
31	5226-003-030	CASE. SHIELD (D)	1
32	5226-003-010	CASE. SHIELD (F)	1
33	5226-003-020	CASE. SHIELD (T)	1
34	5241-003-040	HEAT SINK. REG	1
35	5241-000-110	HEAT SINK. PIN	5
36	5451-003-020	CUSHION. FLT	2
37	5226-003-040	CASE. SHIELD (T2)	1
38	5421-003-070	CUSHION (B)	2
39	A0191-065-000	REMOCON ASS'Y BK	1
39-A	A0191-065-001	REMOCON ASS'Y IB	1
39-B	A0191-095-001	REMOCON ASS'Y AB	1

UNIT PARTS LIST

REF NO.	PART NO.	DESCRIPTION	Q'TY
39-B	A0191-075-001	REMO CON ASSY AB	1
S1	5636-140-010	SCREW 3*10 TEETH COPPER	42
S2	5636-140-040	SCREW A183008000	13
S3	5636-140-060	SCREW S30C BTTN D12.3X10 MC	3
S4	5636-140-100	SCREW A123008002	76
S5	5636-140-050	SCREW A183006002	8
S6	5636-140-220	SCREW A183006002	8
S7	5636-140-080	SCREW A124008000	4
S8	5636-140-030	SCREW A113016000	10
W1	5541-001-030	WASHER. SPRING N2.0 M4.0 MC	4
W2	5541-001-040	WASHER. PLAT P/W 4.7X12X1.0 MC	4
W3	5541-001-010	WASHER. SPRING NO2 M3.0 MC	20
W4	5541-001-020	WASHER. PLAT P/W 3.3X8X0.5 MC	20
MAIN AMP	0112-001-160	ASSY-PCB : MAIN AMP	
REAR AMP	0112-001-1611	ASSY-PCB : REAR AMP	
SUB	0112-001-1612	ASSY-PCB : SUB	
C-VIDEO	0112-001-151	ASSY-PCB : C-VIDEO	
S-VIDEO	0112-001-161	ASSY-PCB : S-VIDEO	
AUDIO INPUT	0112-001-152	ASSY-PCB : AUDIO INPUT	
TUNER	0112-001-1632	ASSY-PCB : TUNER	
FRONT	0112-001-1631	ASSY-PCB : FRONT	
POWER	0112-001-1633	ASSY-PCB : POWER	
HEAD PHONE	0112-001-154	ASSY-PCB : HEADPHONE	
DSP1	0112-001-154	ASSY-PCB : DSP1	
DSP2	0112-001-154	ASSY-PCB : DSP2	
STAND-BY	0112-001-1634	ASSY-PCB : STAND-BY	

GENERAL UNIT EXPLODED VIEW



harman/kardon Service Bulletin

Service bulletin # HK9804 December 1998

Repair rate does not apply

To: All harman/kardon Service Centers

Models: AVR35/45/65 North America/RDS/Singapore (all versions)

Subject: Remote Control Functions Do Not Work

When the batteries are replaced in the AVR35/45/65 remote control, capacitor C1 (.1 Farad, 5.5V) maintains memory functions for 4-5 hours. When C1 is discharged or the remote control is stored for 2 months or more without batteries, the remote goes in the factory default mode. This condition may occur from the time delay in shipping the unit from the factory to the customer. When the batteries are installed, and the customer presses a button on the remote, it may emit a “corrupted” noise signal (caused by capacitor C1) rather than the normal output signal.
As result, certain remote functions may no longer work properly.

In the event you receive an AVR35,45 or 65 with the complaint of “Certain buttons on the remote control do not work”, perform the necessary steps listed below:

1. Make sure there are fresh batteries in the remote, and they are installed correctly.
2. Make sure the area between the remote control and receiver is not blocked by some object, and the distance is no more than 15 feet at an angle no greater than 30 degrees from the front of the receiver.
3. Make sure strong lighting is not directed towards the IR sensor of the receiver.
4. Press each button on the remote and verify proper operation.

If these steps are taken and remote control still does not function properly –

5. This step discharges the capacitor and resets the remote control. (You do *not* need to point the remote control at the receiver or even have the receiver turned on.)
A: **AVR35** – Press the TV and the M4 buttons at the same time and hold for 12 seconds.
B: **AVR45 or AVR65** – Press the TV and the LIGHT buttons at the same time and hold for 12 seconds.

To Test: Make sure your AVR35/45/65 is ON, press each button on the remote and verify proper operation of your receiver.

harman/kardon Service Bulletin

Service bulletin # H/K9903 August 1999

To: All harman/kardon Service Centers

Models: AVR35/45/65 Dolby Digital A/V Receivers

Subject: Interference on Television

One of the measurements of a good signal strength, whether it be audio or RF, is called the signal to noise ratio. In other words, given a set level of interference or noise, the stronger the signal, the less noticeable the noise. Similarly, when a signal is not as strong as desired, you can attempt to lower the noise to improve the signal.

Digital products such as newer FAX machines and state of the art audio products like the AVR35, AVR45 and AVR65 often produce more RF interference than traditional analogue designs. The parts and procedure we recommend below will reduce RF interference, and lower the noise level by improving the signal to noise ratio.

In the event you receive an AVR35, AVR45 or AVR65 Receiver with the complaint "There is video distortion on my television on certain channels when my TV is attached to my AVR receiver, and I am using an external TV antenna", perform the steps listed below. We have also included recommendations which can be made to the customer.

1) Order h/k part# KT65A which consists of two Ferrite chokes, and 12 new black screws for the rear panel, h/k part# A123010002.
2) Attach the larger of the two ferrite chokes on to the receiver's power (AC) cord, approximately 2 inches from the rear panel: Open the block, lay the cord inside, and then wind the power cord around the choke at least 3 times. Close block.
3) Locate the 6 -12 (depending on model) black Phillips screws at the outer rear panel of the unit, only in the area of: the Video panel, Digital Input panel, Remote control panel, *and Pre-Out panel (AVR45 & 65 only).* Remove and replace these screws with h/k part# A123010002. (The new screws have "teeth" on the bottom of the head for assuring proper contact with rear panel.)
4) Test unit.

Further recommendations which can be made to the customer:

1) To limit the interference coming into the cable that goes into the television, clip the smaller ferrite choke (part of kit KT65A) on to the coaxial antenna cable, about 2 inches from the rear of your television set.
2) Change any #RG-59 coaxial cable going into the television with #RG-06 coaxial cable, which has improved shielding.
3) Disconnect all power (AC) cords from the convenience (switched or unswitched) AC outlets on the back of the AVR receiver, as they may behave like antennas.
4) If there is still an unacceptable level of interference, use an antenna amplifier to improve the TV signal strength.

Model	Serial numbers	Screws - action	Ferrite choke from kit# KT65A
AVR35 (120v)	All serial numbers	Replace	Clip on cord
AVR45 (120v)	All serial numbers	Replace	Clip on cord
AVR65 (120v)	JS0003-01001 to JS0003-11078	Replace	Clip on cord
AVR65 (120v)	JS0003-11079 and above	Changed by factory	Installed by factory internally
AVR35 (230v)	All serial numbers	Replace	Installed by factory internally
AVR45 (230v)	All serial numbers	Replace	Installed by factory internally
AVR65 (230v)	All serial numbers	Replace	Installed by factory internally

harman/kardon Service Bulletin

Service bulletin # HK2000-01 Rev1 April 2001

Warranty labor rate: MINOR repair

To: All harman/kardon Service Centers

Models: AVR35/AVR45/AVR65

Subject: No Output in Surround Modes

In early versions of the AVR35, AVR45 and AVR65, the IC484 +5v regulator may overheat and go into thermal protection. Its +5 volt output will cease; when this happens the AC-3 and Surround Processor cannot function normally, and the audio output may go dead, or experience a long delay before any surround mode comes on.

In the event you receive an AVR35, AVR45 or AVR65 A/V receiver with the complaint “when attempting to use the surround modes, the unit’s output goes dead after several minutes, or may not change from stereo into the surround modes until after a long delay, or not change at all” (the words ‘No Data’ may also appear in the display), perform the following modification:

1) Remove the top cover, (14) Philips screws; set the unit on its side and remove the bottom cover, (8) Philips screws.
2) Locate R486, R495 (10 ohm 1 watt resistors) and IC484 (+5v regulator) on the MAIN PCB. See Figure 1. The parts are located near the front right corner of the MAIN PCB when viewed from the front. IC484 is attached to a rectangular aluminum heatsink.
3) Desolder and remove R486, R495 and IC484. The IC484’s heatsink has two additional soldered connections at the bottom of the MAIN PCB. See Figure 2.
4) Replace R486 and R495 with (2) 15 ohm 3 watt resistors, (h/k part# J1771150771X), soldered in series to measure 30 ohms each. See Figure 3. Replace IC484 with +5v regulator, J1217780002X).
5) Replace heatsink with new larger part, (h/k part# J5241003040XX)
6) Use silicon grease when attaching the new regulator to the heatsink, and tighten it sufficiently with its single mounting screw before re-soldering in place.
7) When all new parts are installed, replace both the top & bottom cover.
8) Test the unit by connecting a music source to a digital input, either optical or coaxial, powering it up and monitor the receiver playing normally for extended period of time.

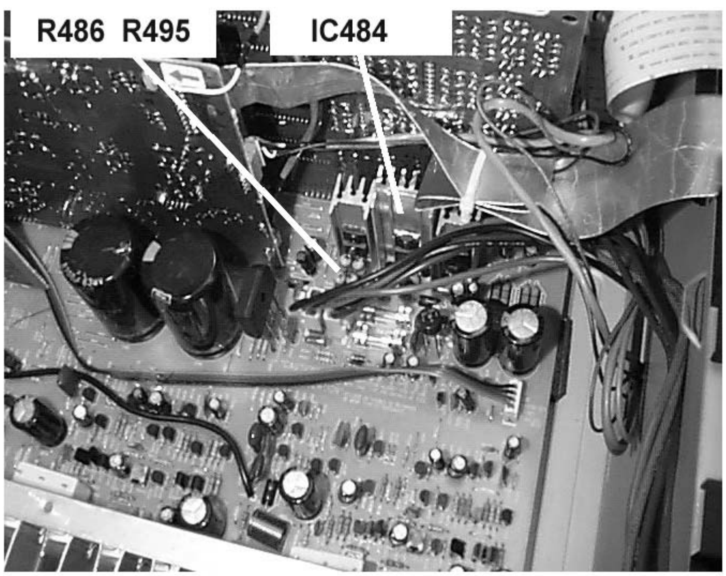


FIGURE 1

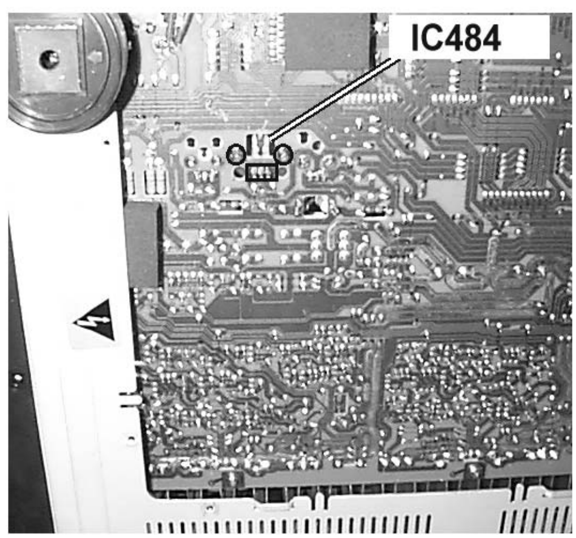
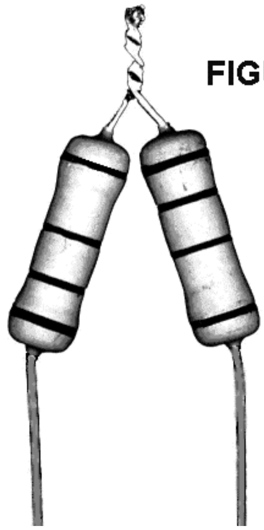


FIGURE 2

Models: AVR35/AVR45/AVR65 Subject: No Output in Digital Playback Mode

FIGURE 3



Model	Serial number 120V	Serial number 230V RDS	Status	Action
AVR35 AVR45 AVR65	JS0007-01000 to JS0007-14748 JS0001-01000 to JS0001-11139 JS0003-01000 to JS0003-02319	JS0005-01000 to JS0005-05956 JS0004-01000 to JS0004-04434 Modified by factory	IC484 Overheating; Unit's output ceases and "No data" appears in the display when using digital inputs	Replace R486 and R495 with (2) 15 ohm 3 watt resistors, soldered in series to equal 30 ohms. Replace IC484 +5v regulator. Replace IC484 Heatsink
AVR35 AVR45 AVR65	JS0007-14749 Or higher JS0001-11140 Or higher JS0003-02320 Or higher	JS0005-05957 Or higher JS0004-04435 Or higher Modified by factory	Modified by factory	NONE REQUIRED

harman/kardon Service Bulletin

Service bulletin # HK2001-02 June 2001 Warranty labor rate: MAJOR repair

To: All harman/kardon Service Centers

Models: AVR35/45/65, (US,SG,RDS Models)

Subject: Left, Right, or Center channel Dead

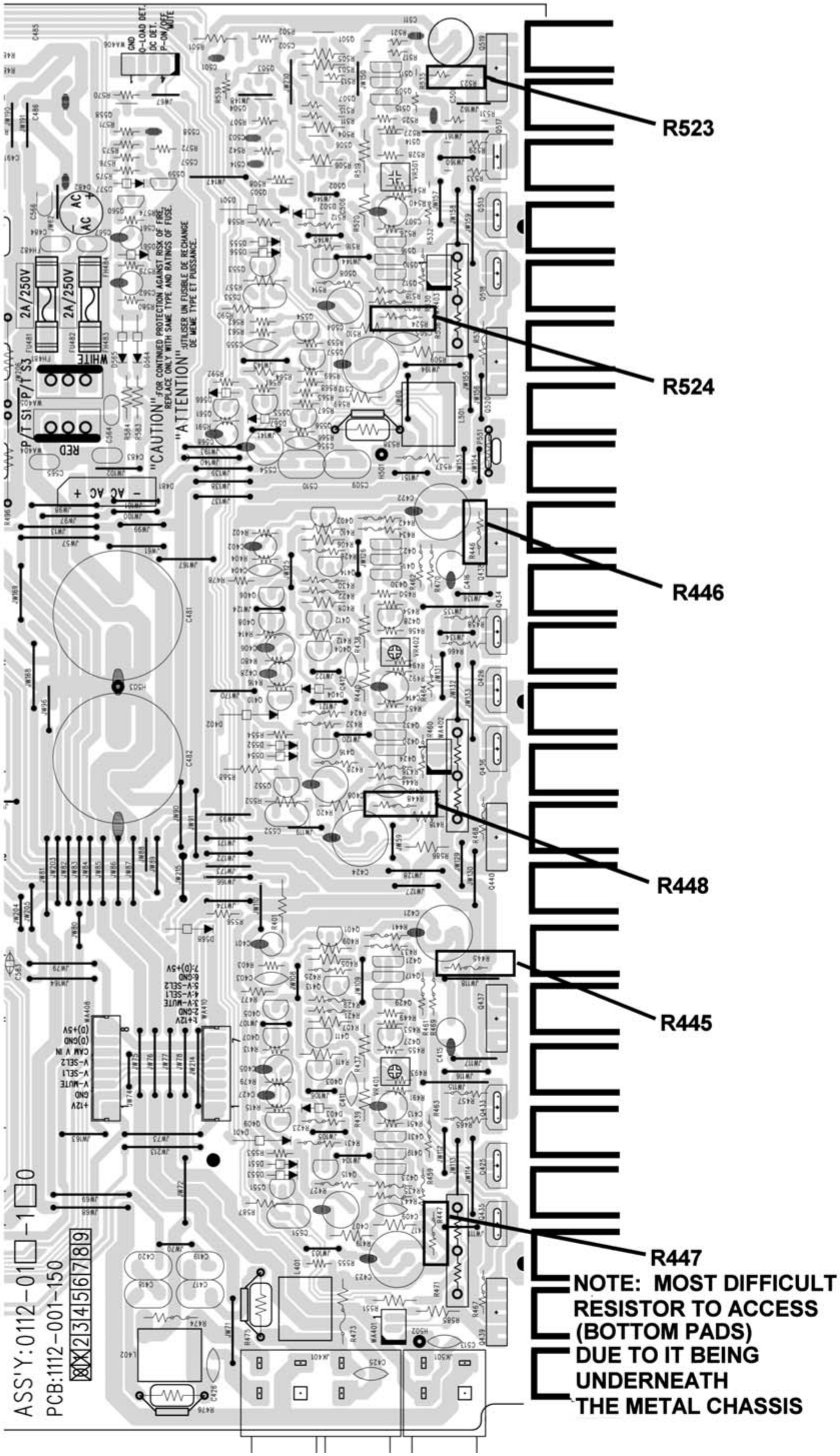
In the event you receive an AVR35, 45, or 65 A/V receiver with the complaint: “One channel has no output”, check the item below:

One or more of the 10 ohm fusible resistors R445,446,447,448,523, or 524 on the main PCB may be damaged. Perform with an ohmmeter an in-circuit resistance test of these 6 resistors. The Ohmmeter should read 10 ohms ±10%. If one or more resistors are out of tolerance, all 6 resistors (R445,446,447,448,523,524) should be changed to 10 ohm 1/4W metal film type, h/k part# 271-10.

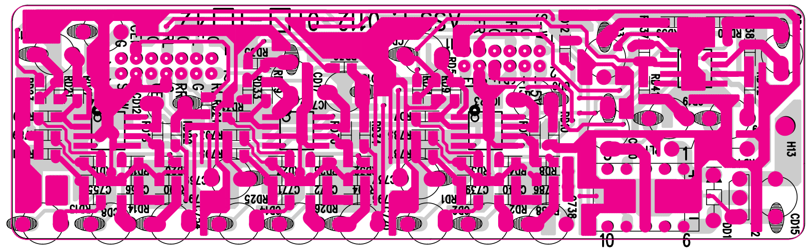
1) Disconnect all external cables; remove the top cover (16 Black Phillips screws).
2) See page 2 for exact location of R445,446,447,448,523,524. If any resistors are found out of tolerance, proceed with the following steps:
3) Lay unit on its left side on a padded surface; remove the (8) Phillips screws holding the bottom chassis grille on, which will expose the Main PCB. Remove the two “feet” that are partially covering the grille.
4) Recommended procedure for resistor replacement is to cut each part off the main PCB from the top, then solder the replacement part on the bottom of the PCB in the same location. There may be a square foam cushion on the bottom of the PCB covering the area(s) of one or more resistors pads; remove it. Use caution when correctly identifying each location, comparing the top and bottom of the main PCB. Tip: Resistors are represented by a silkscreen on the bottom of the main PCB by this line: ├──┤

Model	Serial Number 120V	Serial Number 230V	STATUS	ACTION
AVR35	JS0007-01001 to JS0007-16390	n/a	R445,446,447,448,523, 524 are fusible resistors	If damaged, replace with 10 ohm 1/4W metal film resistors
AVR35RDS	n/a	JS0005-01001 to JS0005-06000	R445,446,447,448,523, 524 are fusible resistors	If damaged, replace with 10 ohm 1/4W metal film resistors
AVR35SG	n/a	JS0009-01001 to JS0009-02537	R445,446,447,448,523, 524 are fusible resistors	If damaged, replace with 10 ohm 1/4W metal film resistors
AVR45	JS0001-01001 to JS0001-12782	n/a	R445,446,447,448,523, 524 are fusible resistors	If damaged, replace with 10 ohm 1/4W metal film resistors
AVR45RDS	n/a	JS0004-01001 to JS0004-04453	R445,446,447,448,523, 524 are fusible resistors	If damaged, replace with 10 ohm 1/4W metal film resistors
AVR45SG	n/a	JS0008-01001 to J30008-02980	R445,446,447,448,523, 524 are fusible resistors	If damaged, replace with 10 ohm 1/4W metal film resistors
AVR65	JS0003-01001 to JS0003-06422	n/a	R445,446,447,448,523, 524 are fusible resistors	If damaged, replace with 10 ohm 1/4W metal film resistors
AVR65RDS	n/a	JS0006-01001 to JS0006-01777	R445,446,447,448,523, 524 are fusible resistors	If damaged, replace with 10 ohm 1/4W metal film resistors
AVR65SG	n/a	JS0010-01001 to JS0010-01464	R445,446,447,448,523, 524 are fusible resistors	If damaged, replace with 10 ohm 1/4W metal film resistors

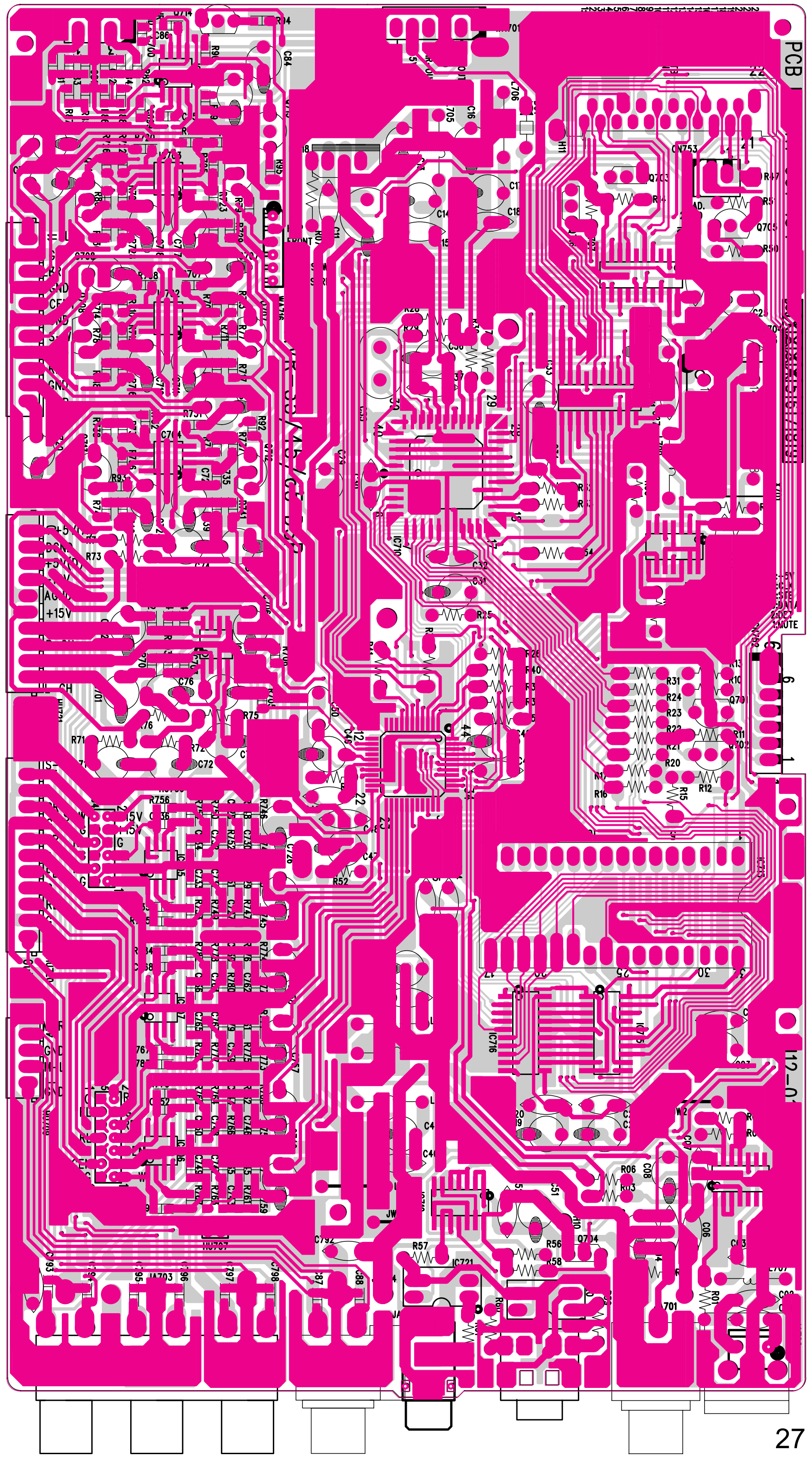
AVR 34/45/65 VIEWED FROM THE TOP (COMPONENT) SIDE



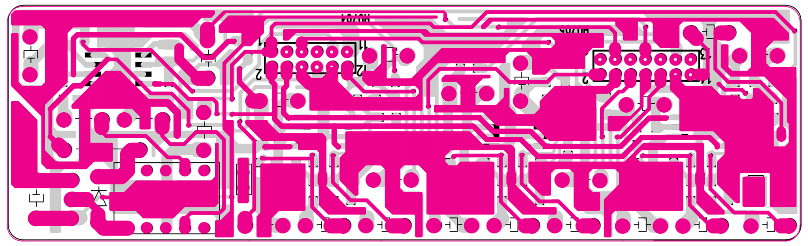
A	B	C	D	E	F	G	H	I	J



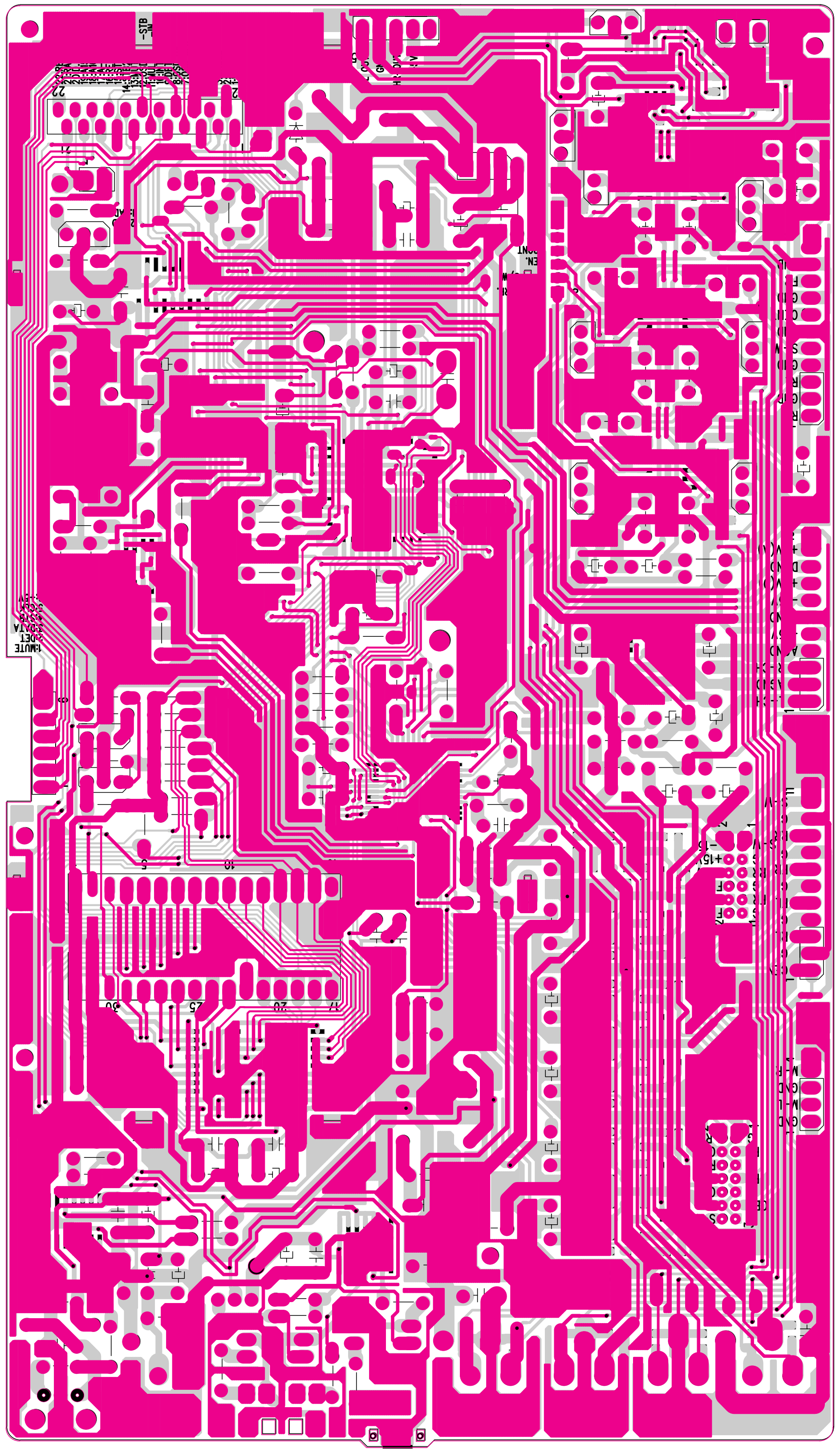
DSP2 P.C.Board



DSP1 P.C.Board (BOTTOM)

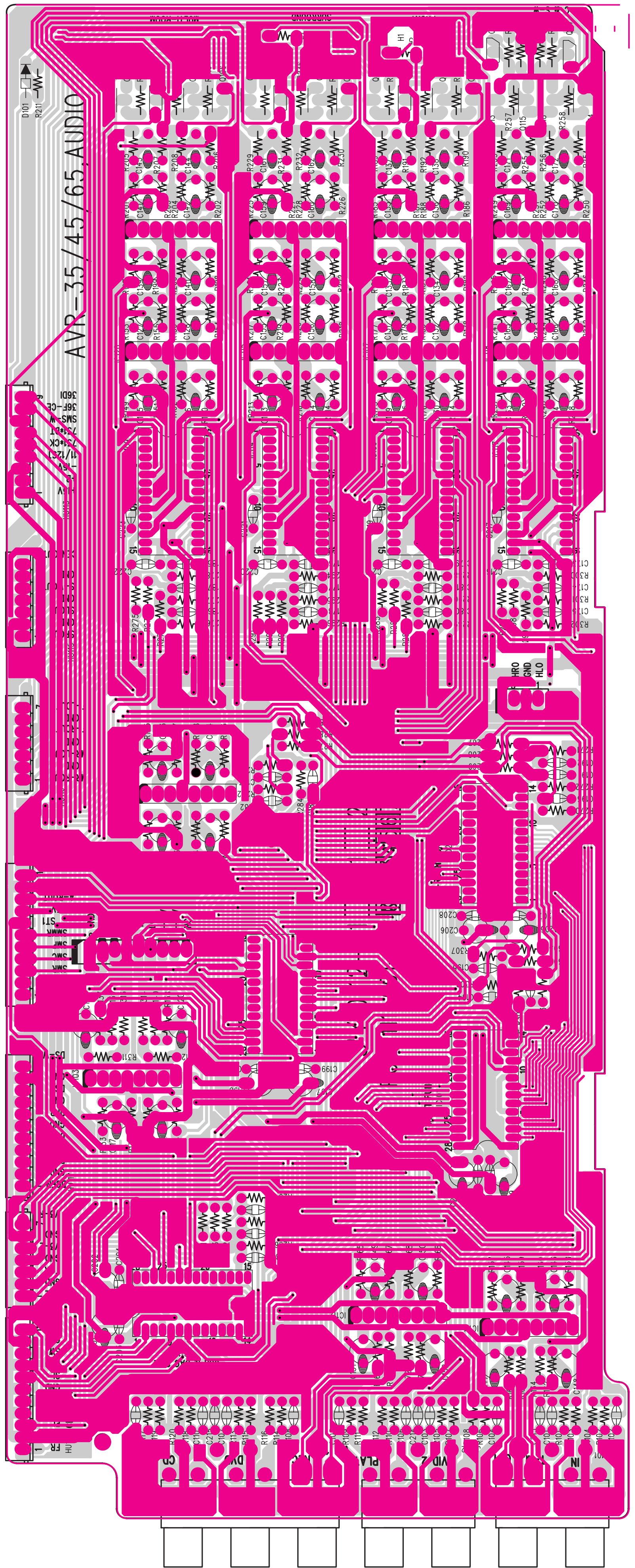


DSP2 P.C.Board

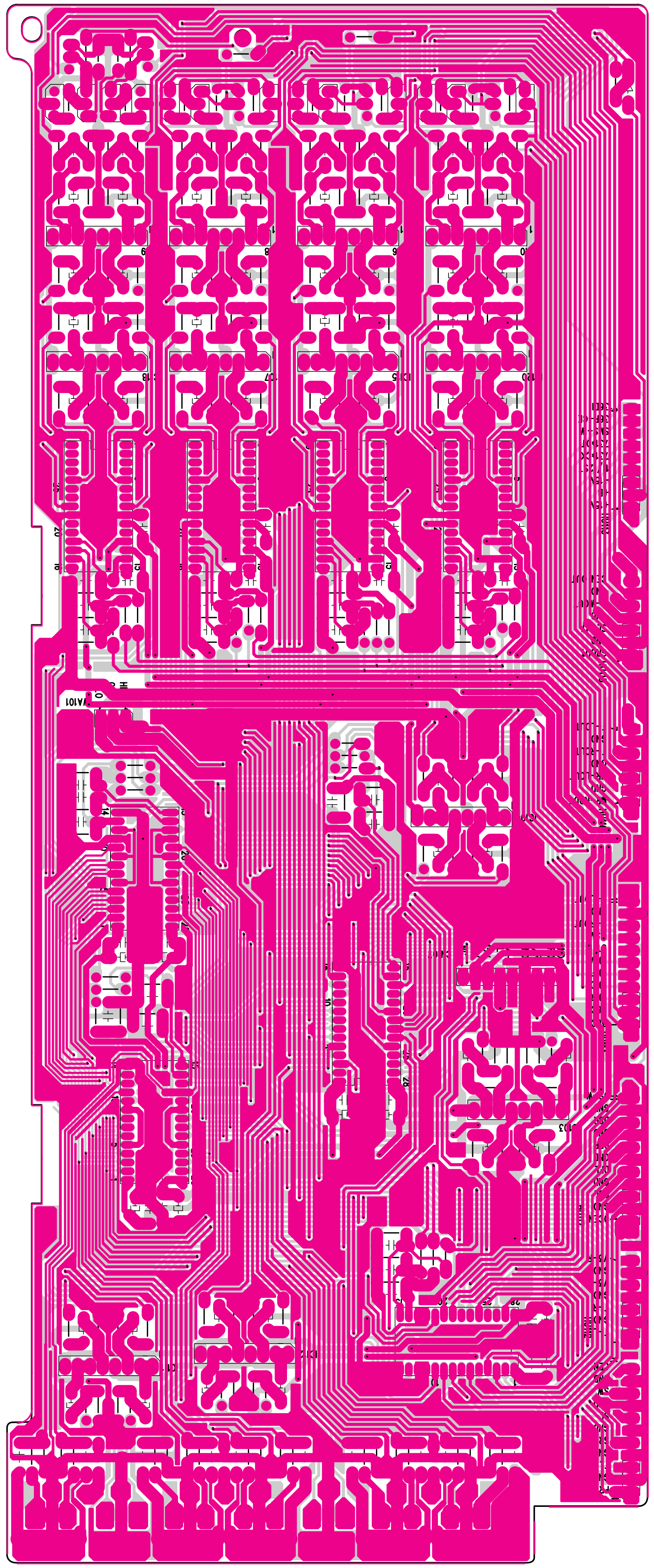


DSP1 P.C.Board (TOP)

A	B	C	D	E	F	G	H	I	J

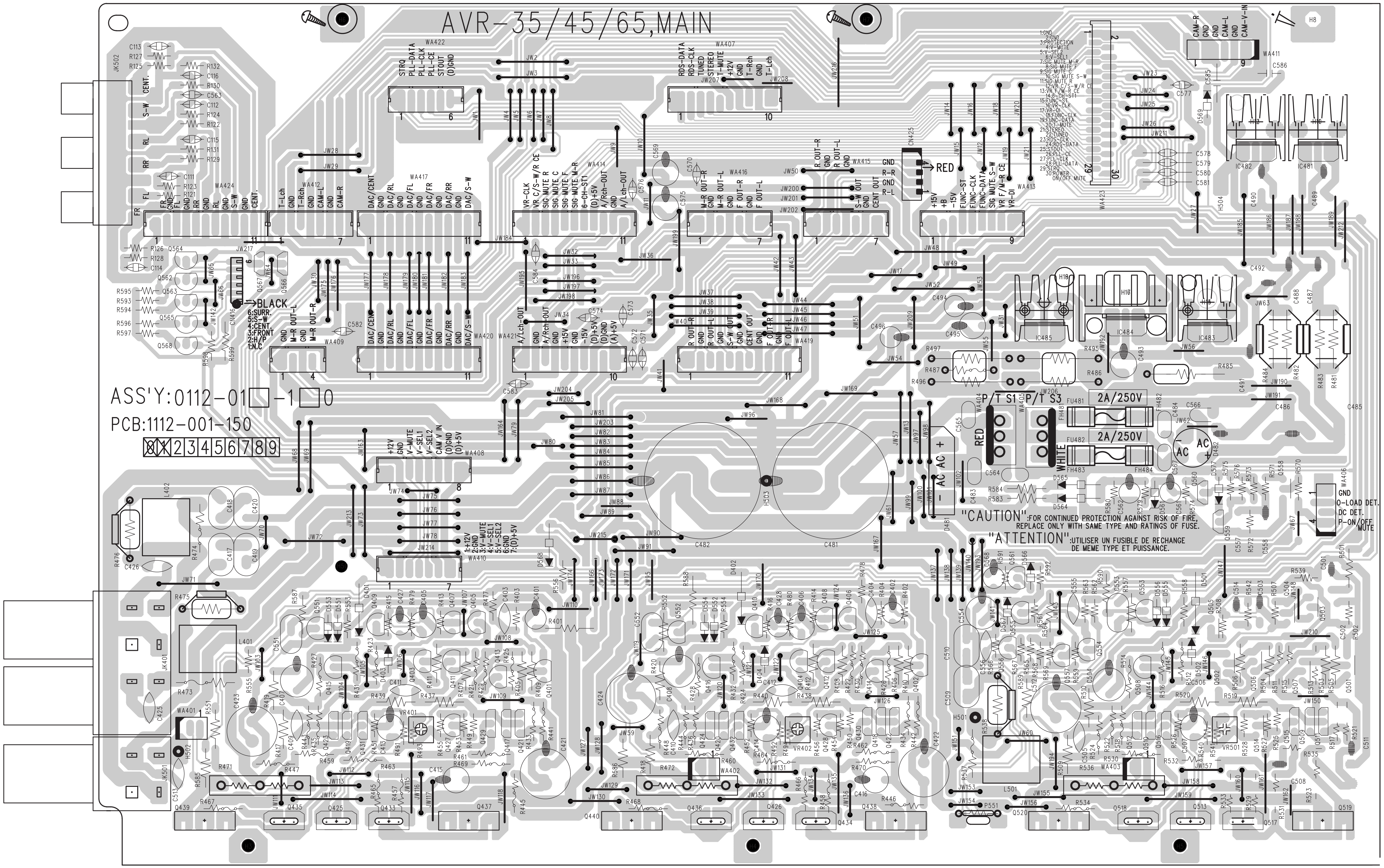


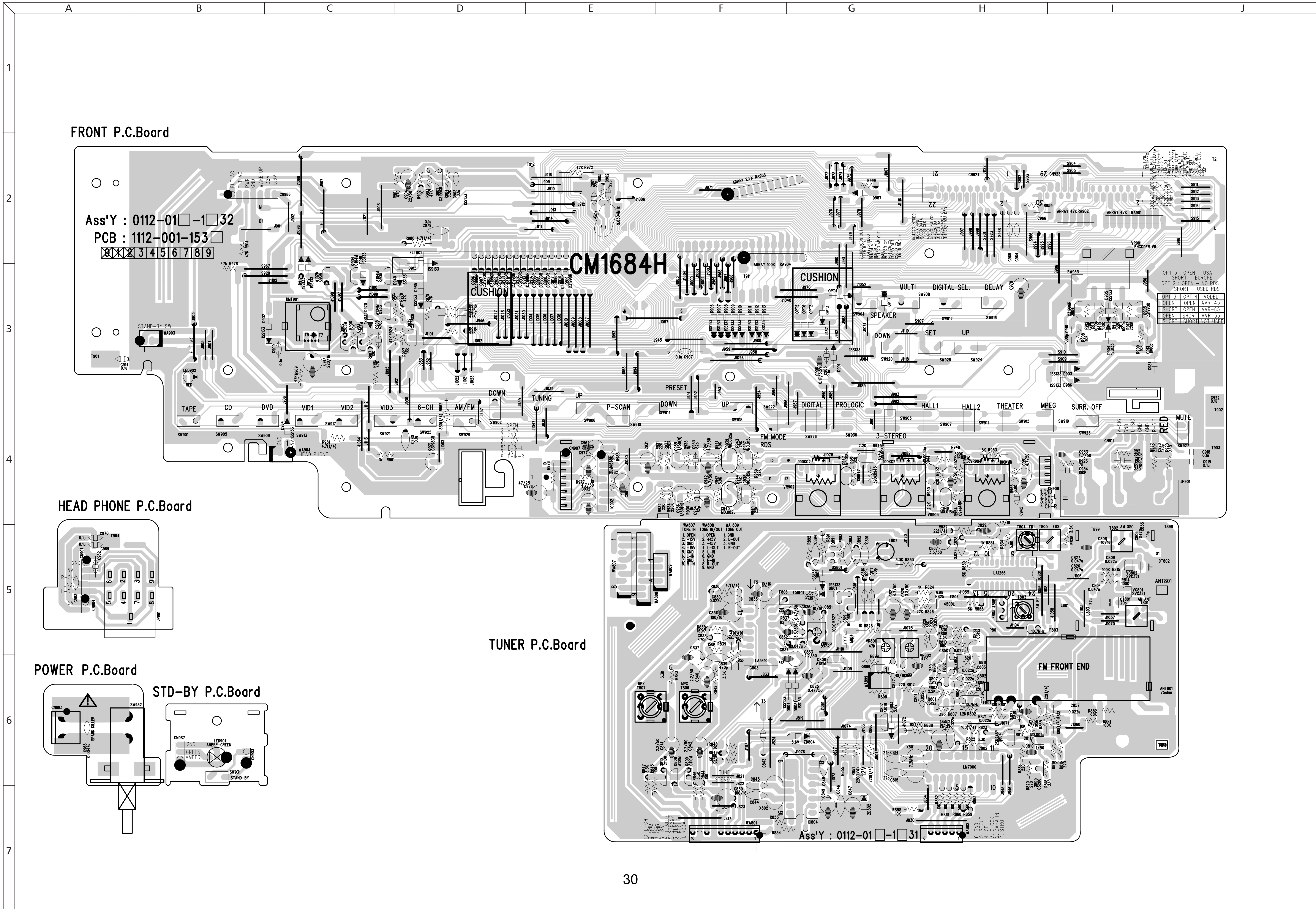
AUDIO P.C.Board (TOP)



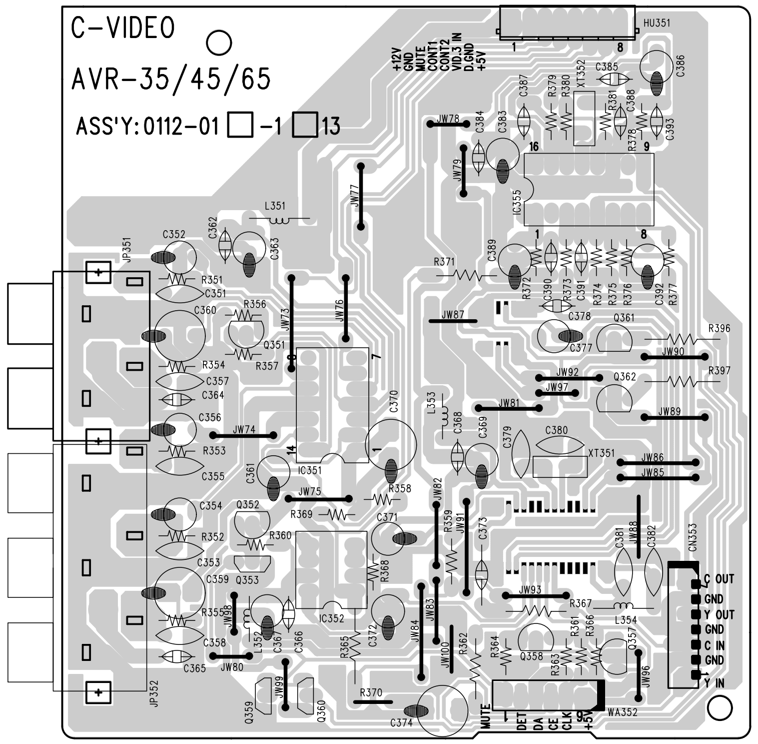
AUDIO P.C.Board (BOTTOM)

MAIN AMP P.C.Board

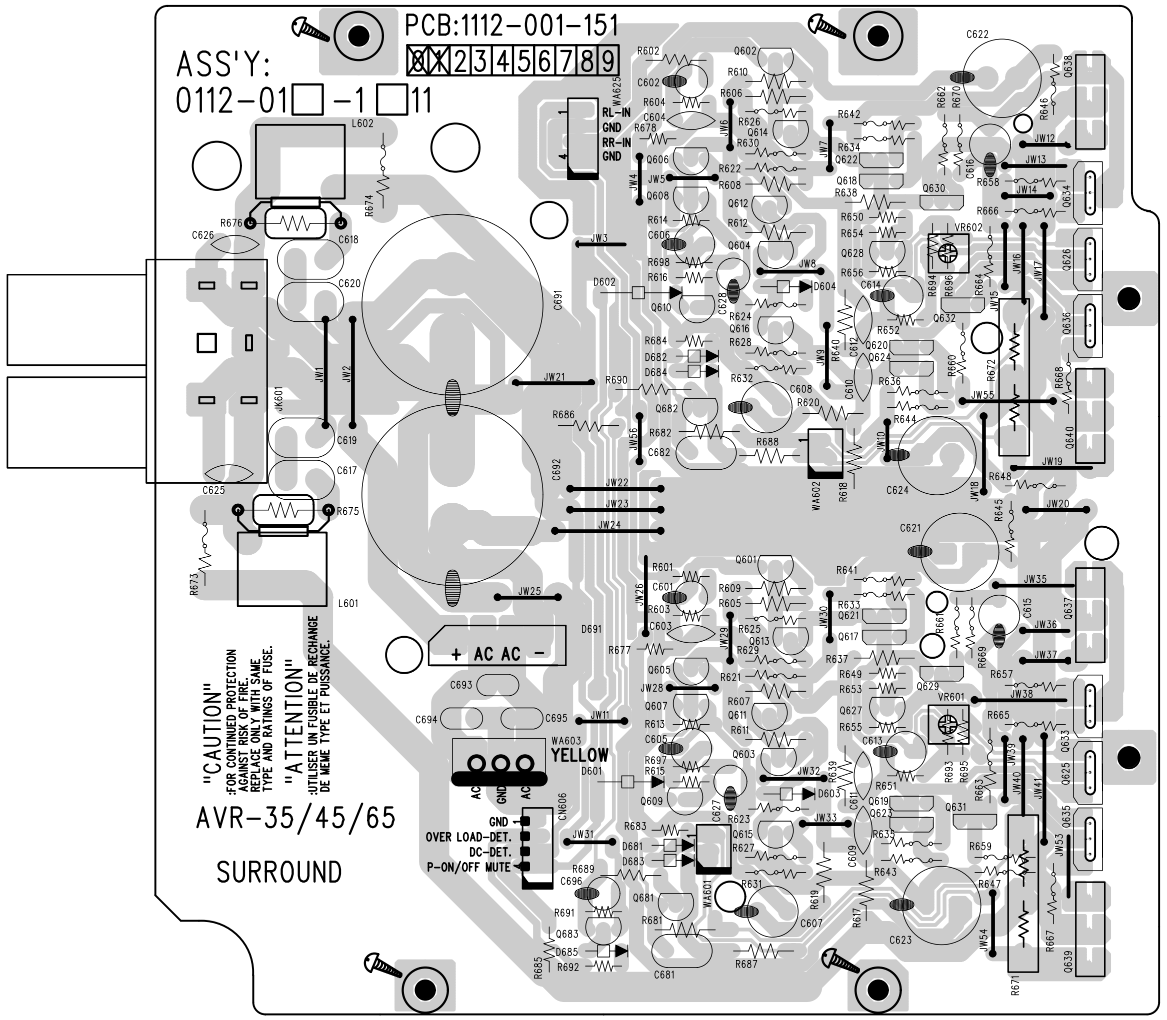



FRONT P.C.Board
Ass'Y : 0112-01□-1□32
PCB : 1112-001-153□
0 1 2 3 4 5 6 7 8 9
CM1684H
CUSHION
CUSHION
STAND-BY SW.
TAPE
CD
DVD
VID1
VID2
VID3
6-CH
AM/FM
DOWN
TUNING
UP
P-SCAN
DOWN
PRESET
UP
FM MODE
RDS
DIGITAL
PROLOGIC
3-STEREO
HALL1
HALL2
THEATER
MPEG
SURR. OFF
MUTE
RED
MULTI
DIGITAL SEL.
DELAY
SPEAKER
DOWN
SET
UP
OPT 5 : OPEN - USA
SHORT - EUROPE
OPT 2 : OPEN - NO RDS
SHORT - USED RDS
HEAD PHONE
HEAD PHONE P.C.Board
POWER P.C.Board
SPARK KILLER
STD-BY P.C.Board
LED901
AMBER-GREEN
GREEN
AMBER
STAND-BY
TUNER P.C.Board
FM FRONT END
LA1266
LM7000
LA3410
AM OSC
ANT801
75ohm
Ass'Y : 0112-01□-1□31

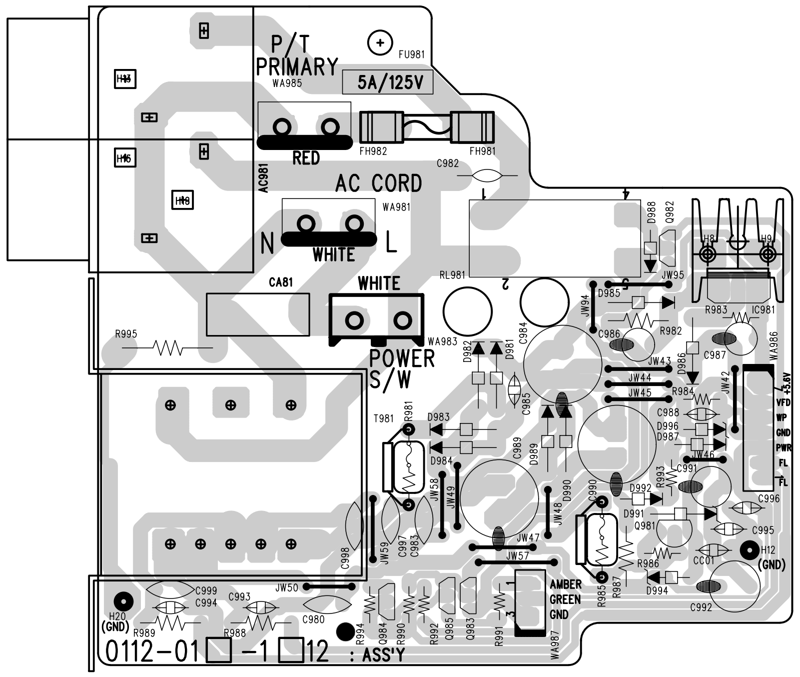
C-Video P.C.Board



Rear Amp P.C.Board



SUB P.C.Board



ELECTRICAL PARTS LIST(45Series)

	REF NO.	PART NO	DESCRIPTION		
		0112-011-150	MAIN AMP P.C.BOARD		
			INTEGRATED CIRCUITS		
⚠	IC 481	1217-781-001	IC 7815	REGULATOR	
⚠	IC 482	1217-791-001	IC 7915	REGULATOR	
⚠	IC 483	1217-782-001	IC 7812	REGULATOR	
⚠	IC 484	1217-780-002	IC 7805	REGULATOR	
⚠	IC 485	1217-780-002	IC 7805	REGULATOR	
			TRANSISTORS		
⚠	Q 437	1241-524-001	POWER 2SC5242-R(130W)		NPN
⚠	Q 438	1241-524-001	POWER 2SC5242-R(130W)		NPN
⚠	Q 519	1241-524-001	POWER 2SC5242-R(130W)		NPN
⚠	Q 439	1242-196-001	POWER 2SA1962-R(130W)		PNP
⚠	Q 440	1242-196-001	POWER 2SA1962-R(130W)		PNP
⚠	Q 520	1242-196-001	POWER 2SA1962-R(130W)		PNP
	Q 559	1243-102-001	KRC102M		NPN
	Q 560	1243-102-001	KRC102M		NPN
	Q 566	1243-102-001	KRC102M		NPN
	Q 567	1243-102-001	KRC102M		NPN
	Q 407	1243-319-001	KTC3198-GR		NPN
	Q 408	1243-319-001	KTC3198-GR		NPN
	Q 504	1243-319-001	KTC3198-GR		NPN
	Q 554	1243-319-001	KTC3198-GR		NPN
	Q 555	1243-319-001	KTC3198-GR		NPN
	Q 556	1243-319-001	KTC3198-GR		NPN
	Q 401	1243-320-001	KTC3200-GR		NPN
	Q 402	1243-320-001	KTC3200-GR		NPN
	Q 403	1243-320-001	KTC3200-GR		NPN
	Q 404	1243-320-001	KTC3200-GR		NPN
	Q 405	1243-320-001	KTC3200-GR		NPN
	Q 406	1243-320-001	KTC3200-GR		NPN
	Q 415	1243-320-001	KTC3200-GR		NPN
	Q 416	1243-320-001	KTC3200-GR		NPN
	Q 427	1243-320-001	KTC3200-GR		NPN
	Q 428	1243-320-001	KTC3200-GR		NPN
	Q 501	1243-320-001	KTC3200-GR		NPN
	Q 502	1243-320-001	KTC3200-GR		NPN
	Q 503	1243-320-001	KTC3200-GR		NPN
	Q 508	1243-320-001	KTC3200-GR		NPN
	Q 514	1243-320-001	KTC3200-GR		NPN
	Q 551	1243-320-001	KTC3200-GR		NPN
	Q 552	1243-320-001	KTC3200-GR		NPN
	Q 553	1243-320-001	KTC3200-GR		NPN
	Q 419	1243-326-001	KTC3206-Y		NPN
	Q 420	1243-326-001	KTC3206-Y		NPN
	Q 423	1243-326-001	KTC3206-Y		NPN
	Q 424	1243-326-001	KTC3206-Y		NPN
	Q 429	1243-326-001	KTC3206-Y		NPN
	Q 430	1243-326-001	KTC3206-Y		NPN
	Q 510	1243-326-001	KTC3206-Y		NPN
	Q 512	1243-326-001	KTC3206-Y		NPN
	Q 515	1243-326-001	KTC3206-Y		NPN
	Q 425	1243-437-001	KTC4370-Y		NPN
	Q 426	1243-437-001	KTC4370-Y		NPN
	Q 435	1243-437-001	KTC4370-Y		NPN
	Q 436	1243-437-001	KTC4370-Y		NPN
	Q 513	1243-437-001	KTC4370-Y		NPN
	Q 518	1243-437-001	KTC4370-Y		NPN
	Q 417	1244-124-002	KTA1024-Y		PNP
	Q 418	1244-124-002	KTA1024-Y		PNP
	Q 421	1244-124-002	KTA1024-Y		PNP
	Q 422	1244-124-002	KTA1024-Y		PNP
	Q 431	1244-124-002	KTA1024-Y		PNP

	REF NO.	PART NO	DESCRIPTION		
	Q 432	1244-124-002	KTA1024-Y		PNP
	Q 509	1244-124-002	KTA1024-Y		PNP
	Q 511	1244-124-002	KTA1024-Y		PNP
	Q 516	1244-124-002	KTA1024-Y		PNP
	Q 557	1244-126-004	KTA1266-GR		PNP
	Q 558	1244-126-004	KTA1266-GR		PNP
	Q 564	1244-126-004	KTA1266-GR		PNP
	Q 562	1244-126-004	KTA1266-GR		PNP
	Q 563	1244-126-004	KTA1266-GR		PNP
	Q 565	1244-126-004	KTA1266-GR		PNP
	Q 568	1244-126-004	KTA1266-GR		PNP
	Q 411	1244-128-001	KTA1268-GR		PNP
	Q 412	1244-128-001	KTA1268-GR		PNP
	Q 413	1244-128-001	KTA1268-GR		PNP
	Q 414	1244-128-001	KTA1268-GR		PNP
	Q 506	1244-128-001	KTA1268-GR		PNP
	Q 507	1244-128-001	KTA1268-GR		PNP
	Q 561	1244-128-001	KTA1268-GR		PNP
	Q 433	1244-169-001	KTA1659-Y		PNP
	Q 434	1244-169-001	KTA1659-Y		PNP
	Q 517	1244-169-001	KTA1659-Y		PNP
			FET		
	Q 409	1248-000-004	2SK373-GR		N-CH
	Q 410	1248-000-004	2SK373-GR		N-CH
	Q 505	1248-000-004	2SK373-GR		N-CH
			DIODES		
	D 566	1252-000-017	1SS133 ,SW.		
	D 567	1252-000-017	1SS133 ,SW.		
	D 401	1252-000-017	1SS133 ,SW.		
	D 402	1252-000-017	1SS133 ,SW.		
	D 501	1252-000-017	1SS133 ,SW.		
	D 568	1252-000-017	1SS133 ,SW.		
	D 569	1252-000-017	1SS133 ,SW.		
	D 577	1252-000-017	1SS133 ,SW.		
	D 403	1252-000-017	1SS133 ,SW.		
	D 404	1252-000-017	1SS133 ,SW.		
	D 502	1252-000-017	1SS133 ,SW.		
	D 551	1252-000-017	1SS133 ,SW.		
	D 552	1252-000-017	1SS133 ,SW.		
	D 553	1252-000-017	1SS133 ,SW.		
	D 554	1252-000-017	1SS133 ,SW.		
	D 555	1252-000-017	1SS133 ,SW.		
	D 556	1252-000-017	1SS133 ,SW.		
⚠	D 564	1252-001-004	1N4004 1A/400V		
⚠	D 565	1252-001-004	1N4004 1A/400V		
⚠	D 482	1253-000-004	W2-04F BRIDGE		
⚠	D 481	1253-000-005	BU8-04F BRIDGE		
⚠	D 561	1254-5R1-021	ZENER 5.1V		
			RESISTORS(CARBON)		
	R 449	1742-102-721	1/8W	1KW-J	
	R 450	1742-102-721	1/8W	1KW-J	
	R 477	1742-100-721	1/8W	10W-J	
	R 478	1742-100-721	1/8W	10W-J	
	R 525	1742-102-721	1/8W	1KW-J	
	R 539	1742-100-721	1/8W	10W-J	
	R 566	1742-101-721	1/8W	100W-J	
	R 567	1742-103-721	1/8W	10KW-J	
	R 568	1742-103-721	1/8W	10KW-J	
	R 569	1742-103-721	1/8W	10KW-J	
	R 571	1742-102-721	1/8W	1KW-J	
	R 573	1742-103-721	1/8W	10KW-J	
	R 574	1742-103-721	1/8W	10KW-J	

* Note
J : +5%~ - 5%
(Tolerance)

REF NO.	PART NO	DESCRIPTION	
R 580	1742-103-721	1/8W	10KW-J
R 591	1742-103-721	1/8W	10KW-J
R 479	1742-103-721	1/8W	10KW-J
R 480	1742-103-721	1/8W	10KW-J
R 542	1742-103-721	1/8W	10KW-J
R 575	1742-103-721	1/8W	10KW-J
R 576	1742-103-721	1/8W	10KW-J
R 565	1742-123-721	1/8W	12KW-J
R 553	1742-153-721	1/8W	15KW-J
R 553	1742-153-721	1/8W	15KW-J
R 554	1742-153-721	1/8W	15KW-J
R 558	1742-153-721	1/8W	15KW-J
R 572	1742-153-721	1/8W	15KW-J
R 555	1742-183-721	1/8W	18KW-J
R 556	1742-183-721	1/8W	18KW-J
R 559	1742-183-721	1/8W	18KW-J
R 598	1742-183-721	1/8W	18KW-J
R 599	1742-183-721	1/8W	18KW-J
R 570	1742-222-721	1/8W	2.2KW-J
R 579	1742-222-721	1/8W	2.2KW-J
R 123	1742-224-721	1/8W	220KW-J
R 124	1742-224-721	1/8W	220KW-J
R 127	1742-224-721	1/8W	220KW-J
R 128	1742-224-721	1/8W	220KW-J
R 131	1742-224-721	1/8W	220KW-J
R 413	1742-271-721	1/8W	270W-J
R 414	1742-271-721	1/8W	270W-J
R 507	1742-271-721	1/8W	270W-J
R 121	1742-331-721	1/8W	330W-J
R 122	1742-331-721	1/8W	330W-J
R 125	1742-331-721	1/8W	330W-J
R 126	1742-331-721	1/8W	330W-J
R 129	1742-331-721	1/8W	330W-J
R 130	1742-331-721	1/8W	330W-J
R 401	1742-331-721	1/8W	330W-J
R 402	1742-331-721	1/8W	330W-J
R 501	1742-331-721	1/8W	330W-J
R 403	1742-333-721	1/8W	33KW-J
R 404	1742-333-721	1/8W	33KW-J
R 502	1742-333-721	1/8W	33KW-J
R 587	1742-393-721	1/8W	39KW-J
R 588	1742-393-721	1/8W	39KW-J
R 590	1742-393-721	1/8W	39KW-J
R 592	1742-393-721	1/8W	39KW-J
R 453	1742-472-721	1/8W	4.7KW-J
R 454	1742-472-721	1/8W	4.7KW-J
R 527	1742-472-721	1/8W	4.7KW-J
R 563	1742-473-721	1/8W	47KW-J
R 451	1742-561-721	1/8W	560W-J
R 452	1742-561-721	1/8W	560W-J
R 526	1742-561-721	1/8W	560W-J
R 455	1742-562-721	1/8W	5.6KW-J
R 456	1742-562-721	1/8W	5.6KW-J
R 528	1742-562-721	1/8W	5.6KW-J
R 562	1742-563-721	1/8W	56KW-J
R 564	1742-563-721	1/8W	56KW-J
R 561	1742-822-721	1/8W	8.2KW-J
R 551	1744-102-731	1/4W	1KW-J
R 552	1744-102-731	1/4W	1KW-J
R 557	1744-102-731	1/4W	1KW-J
R 585	1744-102-731	1/4W	1KW-J
R 586	1744-102-731	1/4W	1KW-J
R 589	1744-102-731	1/4W	1KW-J
R 405	1744-152-731	1/4W	1.5KW-J
R 406	1744-152-731	1/4W	1.5KW-J
R 407	1744-152-731	1/4W	1.5KW-J
R 408	1744-152-731	1/4W	1.5KW-J
R 503	1744-152-731	1/4W	1.5KW-J

REF NO.	PART NO	DESCRIPTION	
R 504	1744-152-731	1/4W	1.5KW-J
R 437	1744-153-731	1/4W	15KW-J
R 438	1744-153-731	1/4W	15KW-J
R 439	1744-153-731	1/4W	15KW-J
R 440	1744-153-731	1/4W	15KW-J
R 519	1744-153-731	1/4W	15KW-J
R 520	1744-153-731	1/4W	15KW-J
R 419	1744-182-731	1/4W	1.8KW-J
R 420	1744-182-731	1/4W	1.8KW-J
R 510	1744-182-731	1/4W	1.8KW-J
R 409	1744-331-731	1/4W	330W-J
R 410	1744-331-731	1/4W	330W-J
R 411	1744-331-731	1/4W	330W-J
R 412	1744-331-731	1/4W	330W-J
R 505	1744-331-731	1/4W	330W-J
R 506	1744-331-731	1/4W	330W-J
R 417	1744-393-731	1/4W	39KW-J
R 418	1744-393-731	1/4W	39KW-J
R 509	1744-393-731	1/4W	39KW-J
R 583	1744-681-731	1/4W	680W-J
R 584	1744-681-731	1/4W	680W-J

RESISTORS(FUSIBLE)

	REF NO.	PART NO	DESCRIPTION	
⚠	R 473	1761-100-731	1/4W	10W-J
⚠	R 474	1761-100-731	1/4W	10W-J
⚠	R 537	1761-100-731	1/4W	10W-J
⚠	R 457	1761-101-731	1/4W	100W-J
⚠	R 458	1761-101-731	1/4W	100W-J
⚠	R 459	1761-101-731	1/4W	100W-J
⚠	R 460	1761-101-731	1/4W	100W-J
⚠	R 529	1761-101-731	1/4W	100W-J
⚠	R 530	1761-101-731	1/4W	100W-J
⚠	R 461	1761-150-731	1/4W	15W-J
⚠	R 462	1761-150-731	1/4W	15W-J
⚠	R 463	1761-150-731	1/4W	15W-J
⚠	R 464	1761-150-731	1/4W	15W-J
⚠	R 531	1761-150-731	1/4W	15W-J
⚠	R 532	1761-150-731	1/4W	15W-J
⚠	R 433	1761-151-731	1/4W	150W-J
⚠	R 434	1761-151-731	1/4W	150W-J
⚠	R 435	1761-151-731	1/4W	150W-J
⚠	R 436	1761-151-731	1/4W	150W-J
⚠	R 441	1761-151-731	1/4W	150W-J
⚠	R 442	1761-151-731	1/4W	150W-J
⚠	R 443	1761-151-731	1/4W	150W-J
⚠	R 444	1761-151-731	1/4W	150W-J
⚠	R 517	1761-151-731	1/4W	150W-J
⚠	R 518	1761-151-731	1/4W	150W-J
⚠	R 521	1761-151-731	1/4W	150W-J
⚠	R 522	1761-151-731	1/4W	150W-J
⚠	R 465	1761-2R2-731	1/4W	2.2W-J
⚠	R 466	1761-2R2-731	1/4W	2.2W-J
⚠	R 467	1761-2R2-731	1/4W	2.2W-J
⚠	R 468	1761-2R2-731	1/4W	2.2W-J
⚠	R 533	1761-2R2-731	1/4W	2.2W-J
⚠	R 534	1761-2R2-731	1/4W	2.2W-J
⚠	R 421	1761-561-731	1/4W	560W-J
⚠	R 422	1761-561-731	1/4W	560W-J
⚠	R 423	1761-561-731	1/4W	560W-J
⚠	R 424	1761-561-731	1/4W	560W-J
⚠	R 425	1761-561-731	1/4W	560W-J
⚠	R 426	1761-561-731	1/4W	560W-J

	REF NO.	PART NO	DESCRIPTION	
⚠	R 427	1761-561-731	1/4W	560W-J
⚠	R 428	1761-561-731	1/4W	560W-J
⚠	R 429	1761-561-731	1/4W	560W-J
⚠	R 430	1761-561-731	1/4W	560W-J
⚠	R 431	1761-561-731	1/4W	560W-J
⚠	R 432	1761-561-731	1/4W	560W-J
⚠	R 511	1761-561-731	1/4W	560W-J
⚠	R 512	1761-561-731	1/4W	560W-J
⚠	R 513	1761-561-731	1/4W	560W-J
⚠	R 514	1761-561-731	1/4W	560W-J
⚠	R 515	1761-561-731	1/4W	560W-J
⚠	R 516	1761-561-731	1/4W	560W-J
⚠	R 469	1761-820-731	1/4W	82W-J
⚠	R 470	1761-820-731	1/4W	82W-J
⚠	R 535	1761-820-731	1/4W	82W-J

RESISTORS(METAL)

	REF NO.	PART NO	DESCRIPTION	
⚠	R 445	1772-100-731	1/4W	10W-J
⚠	R 446	1772-100-731	1/4W	10W-J
⚠	R 447	1772-100-731	1/4W	10W-J
⚠	R 448	1772-100-731	1/4W	10W-J
⚠	R 523	1772-100-731	1/4W	10W-J
⚠	R 524	1772-100-731	1/4W	10W-J
	R 475	1771-100-751	1W	10W-J
	R 476	1771-100-751	1W	10W-J
	R 538	1771-100-751	1W	10W-J
	R 481	1771-220-751	1W	22W-J
	R 482	1771-220-751	1W	22W-J
	R 483	1771-220-751	1W	22W-J
	R 484	1771-220-751	1W	22W-J
	R 485	1771-100-731	3W	10W-J
	R 486	1771-150-771	3W	15W-J
	R 495	1771-150-771	3W	15W-J
	R 496	1771-150-771	3W	15W-J
	R 497	1771-150-771	3W	15W-J

RESISTORS(CEMENT)

REF NO.	PART NO	DESCRIPTION	
R 471	1775-R22-782	5W	0.22W-J
R 472	1775-R22-782	5W	0.22W-J
R 536	1775-R22-782	5W	0.22W-J

CAPACITORS

REF NO.	PART NO	DESCRIPTION		
C 419	1822-030-311	CERA/RA	50V	3pF-C
C 410	1822-030-311	CERA/RA	50V	3pF-C
C 505	1822-030-311	CERA/RA	50V	3pF-C
C 411	1822-101-772	CERA/RA	50V	100pF-J
C 412	1822-101-772	CERA/RA	50V	100pF-J
C 506	1822-101-772	CERA/RA	50V	100pF-J
C 557	1822-102-882	CERA/RA	50V	0.001uF-K
C 555	1822-103-822	CERA/RA	50V	103pF-K
C 556	1822-103-822	CERA/RA	50V	103pF-K
C 403	1822-680-712	CERA/RA	50V	68pF-J
C 404	1822-680-712	CERA/RA	50V	68pF-J
C 502	1822-680-712	CERA/RA	50V	68pF-J
C 563	1832-104-002	CERA/AX	50V	0.1uF-Z
C 582	1832-104-002	CERA/AX	50V	0.1uF-Z
C 583	1832-104-002	CERA/AX	50V	0.1uF-Z
C 584	1832-104-002	CERA/AX	50V	0.1uF-Z
C 585	1832-104-002	CERA/AX	50V	0.1uF-Z
C 586	1832-104-002	CERA/AX	50V	0.1uF-Z
C 111	1832-121-712	CERA/AX	50V	120pF-J
C 112	1832-121-712	CERA/AX	50V	120pF-J
C 113	1832-121-712	CERA/AX	50V	120pF-J
C 114	1832-121-712	CERA/AX	50V	120pF-J
C 115	1832-121-712	CERA/AX	50V	120pF-J
C 116	1832-121-712	CERA/AX	50V	120pF-J
C 485	1861-222-710	ELECT	35V	2200uF-M
C 486	1861-222-710	ELECT	35V	2200uF-M
C 481	1861-822-214	ELECT	63V	8200uF-M
C 482	1861-822-214	ELECT	63V	8200uF-M
C 561	1862-010-804	ELECT	50V	1.0uF-M
C 413	1862-100-017	ELECT	100V	10uF-M
C 414	1862-100-017	ELECT	100V	10uF-M
C 415	1862-100-017	ELECT	100V	10uF-M
C 416	1862-100-017	ELECT	100V	10uF-M
C 507	1862-100-017	ELECT	100V	10uF-M
C 508	1862-100-017	ELECT	100V	10uF-M
C 568	1862-100-504	ELECT	16V	10uF-M
C 558	1862-100-706	ELECT	35V	10uF-M
C 562	1862-100-804	ELECT	50V	10uF-M
C 427	1862-220-604	ELECT	25V	22uF-M
C 428	1862-220-604	ELECT	25V	22uF-M
C 514	1862-220-604	ELECT	25V	22uF-M
C 489	1862-470-604	ELECT	25V	47uF-M
C 490	1862-470-604	ELECT	25V	47uF-M
C 492	1862-470-604	ELECT	25V	47uF-M
C 494	1862-470-604	ELECT	25V	47uF-M
C 496	1862-470-604	ELECT	25V	47uF-M
C 487	1862-470-814	ELECT	50V	47uF-M
C 488	1862-470-814	ELECT	50V	47uF-M
C 491	1862-470-814	ELECT	50V	47uF-M
C 493	1862-470-814	ELECT	50V	47uF-M
C 421	1862-471-011	ELECT	63V	470uF-M
C 422	1862-471-011	ELECT	63V	470uF-M
C 423	1862-471-011	ELECT	63V	470uF-M
C 424	1862-471-011	ELECT	63V	470uF-M
C 511	1862-471-011	ELECT	63V	470uF-M
C 512	1862-471-011	ELECT	63V	470uF-M
C 554	1862-471-306	ELECT	10V	470uF-M
C 405	1862-101-605	ELECT	25V	100uF-M
C 406	1862-101-605	ELECT	25V	100uF-M
C 503	1862-101-605	ELECT	25V	100uF-M
C 401	1862-100-604	ELECT	25V	10uF-M
C 402	1862-100-604	ELECT	25V	10uF-M
C 501	1862-100-604	ELECT	25V	10uF-M
C 407	1862-221-317	ELECT	10V	220uF-M
C 408	1862-221-317	ELECT	10V	220uF-M
C 504	1862-221-317	ELECT	10V	220uF-M
C 484	1876-103-811	MYLAR	100V	0.01uF-K
C 566	1876-103-811	MYLAR	100V	0.01uF-K
C 567	1876-103-811	MYLAR	100V	0.01uF-K
C 417	1876-104-811	MYLAR	100V	0.1uF-K
C 418	1876-104-811	MYLAR	100V	0.1uF-K
C 419	1876-104-811	MYLAR	100V	0.1uF-K
C 420	1876-104-811	MYLAR	100V	0.1uF-K
C 509	1876-104-811	MYLAR	100V	0.1uF-K
C 510	1876-104-811	MYLAR	100V	0.1uF-K
C 551	1876-683-811	MYLAR	100V	0.068uF-K
C 552	1876-683-811	MYLAR	100V	0.068uF-K
C 553	1876-683-811	MYLAR	100V	0.068uF-K
C 483	1879-103-004	FILM	400	0.01uF-K
C 564	1879-103-004	FILM	400V	0.01uF-K
C 565	1879-103-004	FILM	400V	0.01uF-K

WAFERS

REF NO.	PART NO	DESCRIPTION	
WA 401	2111-023-002	2P	5267-02A
WA 402	2111-023-002	2P	5267-02A
WA 403	2111-023-002	2P	5267-02A
WA 406	2111-023-004	4P	5267-04A
WA 411	2111-023-006	6P	5267-06A
WA 405	2111-027-003	3P	JE202-1T-03
WA 404	2111-028-003	3P	JE202-1T-03R
WA 423	2113-030-001	30P	00-8370-301-000-800
WA 422	2114-604-006	6P	JE-604-06,PLUG
WA 412	2114-604-007	7P	JE-604-07,PLUG
WA 415	2114-604-007	7P	JE-604-07,PLUG
WA 416	2114-604-007	7P	JE-604-07,PLUG
WA 408	2114-604-008	8P	JE-604-08,PLUG

REF NO.	PART NO	DESCRIPTION		
WA 413	2114-604-009	9P	JE-604-09,PLUG	
WA 407	2114-604-010	10P	JE-604-10,PLUG	
WA 421	2114-604-010	10P	JE-604-10,PLUG	
WA 414	2114-604-011	11P	JE-604-11,PLUG	
WA 417	2114-604-011	11P	JE-604-11,PLUG	
WA 419	2114-604-011	11P	JE-604-11,PLUG	
WA 420	2114-604-011	11P	JE-604-11,PLUG	
WA 424	2114-604-011	11P	JE-604-11,PLUG	
WA 409	2121-605-004	4P	JE-605-04, SOCKET	
		WIRES		
CN 425	2141-010-013	4P	1533#26,650m/m,	
H 501	2141-010-014	1P	1672#22,250m/m	
CN416	2141-060-012	6P	1007#26,200m/m,	
H 503	2141-010-025	1P	1672#22,165m/m	
		MISCELLANEOUS		
L 401	1451-000-030	COIL-AF CHOKE 0.7uH		
L 402	1451-000-030	COIL-AF CHOKE 0.7uH		
L 501	1451-000-030	COIL-AF CHOKE 0.7uH		
JK 502	1514-060-001	PIN JACK;6P,JW-4105R		
JK 501	1531-020-381	TERMINAL-SPEAKER;2P		
JK 401	1531-040-373	TERMINAL-SPEAKER;4P		
⚠ FU 481	1541-2R0-013	FUSE;250V 2A,21GS(5×20mm)Slo-Blo	**BK**	
⚠ FU 482	1541-2R0-013	FUSE;250V 2A,21GS(5×20mm)Slo-Blo	**BK**	
⚠ FU 481	1543-2R0-001	FUSE;250V T2L,21GL(5×20mm)Slo-Blo	**IB/AB**	
⚠ FU 482	1543-2R0-001	FUSE;250V T2L,21GL(5×20mm)Slo-Blo	**IB/AB**	
FH 481	1551-000-011	HOLDER-FUSE;5Φ		
FH 482	1551-000-011	HOLDER-FUSE;5Φ		
FH 483	1551-000-011	HOLDER-FUSE;5Φ		
FH 484	1551-000-011	HOLDER-FUSE;5Φ		
VR 401	1731-102-006	VR-SEMI;1kohm		
VR 402	1731-102-006	VR-SEMI;1kohm		
VR 501	1731-102-006	VR-SEMI;1kohm		
P 551	1782-000-001	POSISTOR;P42T8D100B04		
		0112-011-150 REAR AMP P.C.BOARD		
		TRANSISTORS		
⚠ Q 637	1241-524-001	POWER 2SC5242-R(130W)	NPN	
⚠ Q 638	1241-524-001	POWER 2SC5242-R(130W)	NPN	
⚠ Q 639	1242-196-001	POWER 2SA1962-R(130W)	PNP	
⚠ Q 640	1242-196-001	POWER 2SA1962-R(130W)	PNP	
⚠ Q 607	1243-319-001	KTC3198-GR	NPN	
Q 608	1243-319-001	KTC3198-GR	NPN	
Q 601	1243-320-001	KTC3200-GR	NPN	
Q 602	1243-320-001	KTC3200-GR	NPN	
Q 603	1243-320-001	KTC3200-GR	NPN	
Q 604	1243-320-001	KTC3200-GR	NPN	
Q 605	1243-320-001	KTC3200-GR	NPN	
Q 606	1243-320-001	KTC3200-GR	NPN	
Q 615	1243-320-001	KTC3200-GR	NPN	
Q 616	1243-320-001	KTC3200-GR	NPN	
Q 627	1243-320-001	KTC3200-GR	NPN	
Q 628	1243-320-001	KTC3200-GR	NPN	
Q 681	1243-320-001	KTC3200-GR	NPN	
Q 682	1243-320-001	KTC3200-GR	NPN	
Q 619	1243-326-001	KTC3206-Y	NPN	
Q 620	1243-326-001	KTC3206-Y	NPN	
Q 623	1243-326-001	KTC3206-Y	NPN	
Q 624	1243-326-001	KTC3206-Y	NPN	
Q 629	1243-326-001	KTC3206-Y	NPN	
Q 630	1243-326-001	KTC3206-Y	NPN	
Q 625	1243-437-001	KTC4370-Y	NPN	
Q 626	1243-437-001	KTC4370-Y	NPN	
Q 635	1243-437-001	KTC4370-Y	NPN	
Q 636	1243-437-001	KTC4370-Y	NPN	
Q 617	1244-124-002	KTA1024-Y	PNP	

REF NO.	PART NO	DESCRIPTION		
Q 618	1244-124-002	KTA1024-Y		PNP
Q 621	1244-124-002	KTA1024-Y		PNP
Q 622	1244-124-002	KTA1024-Y		PNP
Q 631	1244-124-002	KTA1024-Y		PNP
Q 632	1244-124-002	KTA1024-Y		PNP
Q 611	1244-128-001	KTA1268-GR		PNP
Q 612	1244-128-001	KTA1268-GR		PNP
Q 613	1244-128-001	KTA1268-GR		PNP
Q 614	1244-128-001	KTA1268-GR		PNP
Q 683	1244-128-001	KTA1268-GR		PNP
Q 633	1244-169-001	KTA1659-Y		PNP
Q 634	1244-169-001	KTA1659-Y		PNP
		FET		
Q 609	1248-000-004	FET;2SK373-GR		N-CH
Q 610	1248-000-004	FET;2SK373-GR		N-CH
		DIODES(REAR AMP)		
D 601	1252-000-017	1SS133 ,	SW.	
D 602	1252-000-017	1SS133 ,	SW.	
D 603	1252-000-017	1SS133 ,	SW.	
D 604	1252-000-017	1SS133 ,	SW.	
D 681	1252-000-017	1SS133 ,	SW.	
D 682	1252-000-017	1SS133 ,	SW.	
D 683	1252-000-017	1SS133 ,	SW.	
D 684	1252-000-017	1SS133 ,	SW.	
D 685	1252-000-017	1SS133 ,	SW.	
⚠ D 691	1253-000-006	BU6-04F, BRIDGE		
		RESISTORS(CARBON)		
R 677	1742-100-721	1/8W	10W-J	
R 678	1742-100-721	1/8W	10W-J	
R 650	1742-102-721	1/8W	1KW-J	
R 691	1742-103-721	1/8W	10KW-J	
R 697	1742-103-721	1/8W	10KW-J	
R 649	1742-102-721	1/8W	1KW-J	
R 698	1742-103-721	1/8W	10KW-J	
R 683	1742-153-721	1/8W	15KW-J	
R 684	1742-153-721	1/8W	15KW-J	
R 685	1742-183-721	1/8W	18KW-J	
R 686	1742-183-721	1/8W	18KW-J	
R 613	1742-271-721	1/8W	270W-J	
R 614	1742-271-721	1/8W	270W-J	
R 601	1742-331-721	1/8W	330W-J	
R 602	1742-331-721	1/8W	330W-J	
R 603	1742-393-721	1/8W	39KW-J	
R 604	1742-393-721	1/8W	39KW-J	
R 689	1742-393-721	1/8W	39KW-J	
R 690	1742-393-721	1/8W	39KW-J	
R 692	1742-393-721	1/8W	39KW-J	
R 653	1742-472-721	1/8W	4.7KW-J	
R 654	1742-472-721	1/8W	4.7KW-J	
R 651	1742-561-721	1/8W	560W-J	
R 652	1742-561-721	1/8W	560W-J	
R 655	1742-562-721	1/8W	5.6KW-J	
R 656	1742-562-721	1/8W	5.6KW-J	
R 681	1744-102-731	1/4W	1KW-J	
R 682	1744-102-731	1/4W	1KW-J	
R 687	1744-102-731	1/4W	1KW-J	
R 688	1744-102-731	1/4W	1KW-J	
R 605	1744-152-731	1/4W	1.5KW-J	
R 606	1744-152-731	1/4W	1.5KW-J	
R 607	1744-152-731	1/4W	1.5KW-J	
R 608	1744-152-731	1/4W	1.5KW-J	
R 637	1744-153-731	1/4W	15KW-J	
R 638	1744-153-731	1/4W	15KW-J	
R 639	1744-153-731	1/4W	15KW-J	
R 640	1744-153-731	1/4W	15KW-J	
R 619	1744-202-731	1/4W	2KW-J	

	REF NO.	PART NO	DESCRIPTION	
	R 620	1744-202-731	1/4W	2KW-J
	R 609	1744-331-731	1/4W	330W-J
	R 610	1744-331-731	1/4W	330W-J
	R 611	1744-331-731	1/4W	330W-J
	R 612	1744-331-731	1/4W	330W-J
	R 617	1744-393-731	1/4W	39KW-J
	R 618	1744-393-731	1/4W	39KW-J
	R 615	1742-273-721	1/8W	27KW-J
	R 616	1742-273-721	1/8W	27KW-J

RESISTORS(FUSIBLE)

	REF NO.	PART NO	DESCRIPTION	
⚠	R 673	1761-100-731	1/4W	10W-J
⚠	R 674	1761-100-731	1/4W	10W-J
⚠	R 657	1761-101-731	1/4W	100W-J
⚠	R 658	1761-101-731	1/4W	100W-J
⚠	R 659	1761-101-731	1/4W	100W-J
⚠	R 660	1761-101-731	1/4W	100W-J
⚠	R 661	1761-150-731	1/4W	15W-J
⚠	R 662	1761-150-731	1/4W	15W-J
⚠	R 663	1761-150-731	1/4W	15W-J
⚠	R 664	1761-150-731	1/4W	15W-J
⚠	R 633	1761-151-731	1/4W	150W-J
⚠	R 634	1761-151-731	1/4W	150W-J
⚠	R 635	1761-151-731	1/4W	150W-J
⚠	R 636	1761-151-731	1/4W	150W-J
⚠	R 641	1761-151-731	1/4W	150W-J
⚠	R 642	1761-151-731	1/4W	150W-J
⚠	R 643	1761-151-731	1/4W	150W-J
⚠	R 644	1761-151-731	1/4W	150W-J
⚠	R 665	1761-2R2-731	1/4W	2.2W-J
⚠	R 666	1761-2R2-731	1/4W	2.2W-J
⚠	R 667	1761-2R2-731	1/4W	2.2W-J
⚠	R 621	1761-561-731	1/4W	560W-J
⚠	R 622	1761-561-731	1/4W	560W-J
⚠	R 623	1761-561-731	1/4W	560W-J
⚠	R 624	1761-561-731	1/4W	560W-J
⚠	R 625	1761-561-731	1/4W	560W-J
⚠	R 627	1761-561-731	1/4W	560W-J
⚠	R 628	1761-561-731	1/4W	560W-J
⚠	R 629	1761-561-731	1/4W	560W-J
⚠	R 630	1761-561-731	1/4W	560W-J
⚠	R 631	1761-561-731	1/4W	560W-J
⚠	R 632	1761-561-731	1/4W	560W-J
⚠	R 669	1761-820-731	1/4W	82W-J
⚠	R 670	1761-820-731	1/4W	82W-J

RESISTORS(METAL)

	REF NO.	PART NO	DESCRIPTION	
⚠	R 675	1771-100-751	1W	10W-J
⚠	R 676	1771-100-751	1W	10W-J
⚠	R 645	1761-100-731	1/4W	10W-J
⚠	R 646	1761-100-731	1/4W	10W-J
⚠	R 647	1761-100-731	1/4W	10W-J
⚠	R 648	1761-100-731	1/4W	10W-J

RESISTORS(CEMENT)

	REF NO.	PART NO	DESCRIPTION	
⚠	R 671	1775-R22-782	5W	0.22W-J
⚠	R 672	1775-R22-782	5W	0.22W-J

CAPACITORS

REF NO.	PART NO	DESCRIPTION		
C 609	1822-030-311	CERA	50V	3pF-C
C 610	1822-030-311	CERA	50V	3pF-C
C 611	1822-101-772	CERA	50V	100pF-J
C 612	1822-101-772	CERA	50V	100pF-J
C 603	1822-680-712	CERA	50V	68pF-J
C 604	1822-680-712	CERA	50V	68pF-J
C 621	1861-471-811	ELECT	50V	470uF-M
C 622	1861-471-811	ELECT	50V	470uF-M
C 623	1861-471-811	ELECT	50V	470uF-M
C 624	1861-471-811	ELECT	50V	470uF-M
C 691	1861-682-800	ELECT	50V	6800uF-M
C 692	1861-682-800	ELECT	50V	6800uF-M
C 613	1862-100-017	ELECT	100V	10uF-M
C 614	1862-100-017	ELECT	100V	10uF-M
C 615	1862-100-017	ELECT	100V	10uF-M
C 616	1862-100-017	ELECT	100V	10uF-M
C 696	1862-100-504	ELECT	16V	10uF-M
C 627	1862-220-604	ELECT	25V	22uF-M
C 628	1862-220-604	ELECT	25V	22uF-M
C 605	1862-101-605	ELECT	25V	100uF-M
C 606	1862-101-605	ELECT	25V	100uF-M
C 601	1862-100-604	ELECT	25V	10uF-M
C 619	1876-104-811	MYLAR	100V	0.1uF-K
C 681	1876-683-811	MYLAR	100V	0.068uF-K
C 682	1876-683-811	MYLAR	100V	0.068uF-K

WAFERS

REF NO.	PART NO	DESCRIPTION	
WA 601	2111-023-002	2P	5267-02A
WA 602	2111-023-002	2P	5267-02A
WA 625	2111-023-004	4P	5267-04A
WA 603	2111-029-003	3P	JE202-1T-03Y

MISCELLANEOUS

REF NO.	PART NO	DESCRIPTION
CN 606	2141-010-015	WIRE 4P 1007#26,750m/m
L 601	1451-000-030	COIL-AF CHOKE
L 602	1451-000-030	COIL-AF CHOKE
JK 601	1531-040-373	TERMINAL-SPEAKER;4P
VR 601	1731-102-006	VR-SEMI 1kohm
VR 602	1731-102-006	VR-SEMI 1kohm

0112-011-1512 SUB P.C.BOARD

INTEGRATED CIRCUITS

	REF NO.	PART NO	DESCRIPTION		
⚠	IC 981	1217-780-002	IC	7805	REGULATOR

TRANSISTORS

REF NO.	PART NO	DESCRIPTION	
Q 985	1243-103-004	KRC103M	NPN
Q 984	1243-103-004	KRC103M	NPN
Q 981	1244-128-001	KTA1268-GR	PNP
Q 983	1243-319-001	KTC3198-GR	NPN
Q 982	1243-319-001	KTC3198-GR	NPN

DIODES

	REF NO.	PART NO	DESCRIPTION	
	D 987	1252-000-017	1SS133 ,	SW .
	D 988	1252-000-017	1SS133 ,	SW .
	D 992	1252-000-017	1SS133 ,	SW .
⚠	D 981	1252-001-004	IN4004	1A/400V, RECT
⚠	D 982	1252-001-004	IN4004	1A/400V, RECT
⚠	D 983	1252-001-004	IN4004	1A/400V, RECT
⚠	D 984	1252-001-004	IN4004	1A/400V, RECT
⚠	D 985	1252-001-004	IN4004	1A/400V, RECT
⚠	D 986	1252-001-004	IN4004	1A/400V, RECT
⚠	D 989	1252-001-004	IN4004	1A/400V, RECT
⚠	D 990	1252-001-004	IN4004	1A/400V, RECT
	D 991	1254-300-001	ZENER	30V
	D 996	1254-4R7-025	ZENER	4.7V
	D 994	1254-7R5-001	ZENER	7.5V

RESISTORS(CARBON)

REF NO.	PART NO	DESCRIPTION	
R 983	1742-102-721	1/8W	1KW-J
R 990	1742-103-721	1/8W	10KW-J
R 994	1742-103-721	1/8W	10KW-J
R 991	1742-151-721	1/8W	150W-J
R 986	1742-222-721	1/8W	2.2KW-J
R 984	1742-272-721	1/8W	2.7KW-J
R 992	1742-471-721	1/8W	470W-J
R 988	1744-1R0-731	1/4W	1W-J
R 989	1744-1R0-731	1/4W	1W-J

	REF NO.	PART NO	DESCRIPTION	
	R 982	1744-222-731	1/4W	2.2KW-J
	R 987	1744-561-731	1/4W	560W-J
	R 993	1742-682-721	1/8W	6.8KW-J

RESISTORS(FUSIBLE)

	REF NO.	PART NO	DESCRIPTION	
⚠	R 985	1761-220-731	1/4W	22W-J
⚠	R 981	1761-4R7-731	1/4W	4.7W-J

CAPACITORS

	REF NO.	PART NO	DESCRIPTION		
	C 983	1822-103-822	CERA/RA	50V	103pF-K
	C 997	1822-103-822	CERA/RA	50V	103pF-K
	C 998	1822-103-822	CERA/RA	50V	103pF-K
	C 999	1822-103-822	CERA/RA	50V	103pF-K
	C 988	1832-473-002	CERA/AX	50V	0.047uF-Z
	C 985	1832-104-002	CERA/AX	50V	0.1uF-Z
	C 993	1832-104-002	CERA/AX	50V	0.1uF-Z
	C 994	1832-104-002	CERA/AX	50V	0.1uF-Z
	C 995	1832-104-002	CERA/AX	50V	0.1uF-Z
	C 996	1832-104-002	CERA/AX	50V	0.1uF-Z
⚠	C 982	1825-000-010	AC	250V	0.0047uF-M
⚠	C 981	1825-104-000	AC	275V	0 .1uF
	C 992	1861-101-706	ELELT	35V	100uF-M
	C 984	1861-471-811	ELECT	50V	470uF-M
	C 989	1861-471-811	ELECT	50V	470uF-M
	C 990	1861-471-811	ELECT	50V	470uF-M
	C 986	1862-010-804	ELECT	50V	1.0uF-M
	C 987	1862-100-804	ELECT	50V	10uF-M
	C 991	1862-470-814	ELECT	50V	47uF-M

WAFERS

REF NO.	PART NO	DESCRIPTION
WA 987	2111-023-003	5267-03A,3P
WA 986	2111-023-007	5267-07A,7P
WA 983	2111-026-002	2P,35328-0210
WA 985	2111-028-002	2P,JE202A-1T-02R
WA 981	2111-027-002	JE202A-1T-02(3-2)

MISCELLANEOUS

	REF NO.	PART NO	DESCRIPTION	
⚠	FU 981	1541-6R3-125	FUSE;125V,6.3A,21GS,(5×20㎜),SLO−BLO	**BK**
⚠	FU 981	1543-4R0-001	FUSE;125V,T4L,21GL,(5×20㎜),SLO−BLO	**IB/AB**
⚠	T 981	1411-000-004	TRANS-SUB;AVR-45/65	
⚠	T 981	1411-000-005	TRANS-SUB;AVR-45/65(RDS)	
	FH 981	1551-000-011	HOLDER-FUSE	
	FH 982	1551-000-011	HOLDER-FUSE	
⚠	AC 981	1561-000-005	AC OUTLET S2-764T-200	
⚠	AC 981	1561-000-006	AC OUTLET S2-762T-206	
⚠	R 995	1783-335-001	COMPOSITION,1/2,3.3M	
⚠	RL 981	2022-000-002	RELAY;DH12D1-O(M),DEC	

0112-011-152 AUDIO INPUT P.C.BOARD

INTEGRATED CIRCUITS

REF NO.	PART NO	DESCRIPTION
IC 103	1211-455-001	IC NJM4558L OP AMP
IC 107	1211-455-001	IC NJM4558L OP AMP
IC 108	1211-455-001	IC NJM4558L OP AMP
IC 111	1211-455-001	IC NJM4558L OP AMP
IC 112	1211-455-001	IC NJM4558L OP AMP
IC 115	1211-455-001	IC NJM4558L OP AMP
IC 116	1211-455-001	IC NJM4558L OP AMP
IC 118	1211-455-001	IC NJM4558L OP AMP
IC 119	1211-455-001	IC NJM4558L OP AMP
IC 105	1212-731-002	IC NJU7311 ANALOG SW
IC 113	1212-731-002	IC NJU7311 ANALOG SW
IC 101	1212-731-003	IC NJU7312 ANALOG SW
IC 106	1212-753-001	IC LC7536 ELEC Volume
IC 114	1212-753-001	IC LC7536 ELEC Volume
IC 117	1212-753-001	IC LC7536 ELEC Volume

TRANSISTORS

REF NO.	PART NO	DESCRIPTION	
Q 104	1243-101-018	KRC101M	NPN
Q 112	1243-101-018	KRC101M	NPN
Q 116	1243-101-018	KRC101M	NPN
Q 117	1243-101-018	KRC101M	PNP
Q 101	1243-130-003	KTD1302	PNP
Q 102	1243-130-003	KTD1302	NPN
Q 109	1243-130-003	KTD1302	NPN
Q 110	1243-130-003	KTD1302	NPN
Q 113	1243-130-003	KTD1302	NPN
Q 114	1243-130-003	KTD1302	NPN
Q 103	1244-126-004	KTA1266-GR	NPN
Q 111	1244-126-004	KTA1266-GR	NPN
Q 115	1244-126-004	KTA1266-GR	NPN
Q 118	1244-126-004	KTA1266-GR	NPN

DIODE

REF NO.	PART NO	DESCRIPTION
D 101	1252-000-017	1SS133, SW.

RESISTORS(CARBAN)

REF NO.	PART NO	DESCRIPTION	
R 133	1742-101-721	1/8W	100W-J
R 134	1742-101-721	1/8W	100W-J
R 137	1742-101-721	1/8W	100W-J
R 138	1742-101-721	1/8W	100W-J
R 141	1742-101-721	1/8W	100W-J
R 142	1742-101-721	1/8W	100W-J
R 157	1742-101-721	1/8W	100W-J
R 158	1742-101-721	1/8W	100W-J
R 165	1742-101-721	1/8W	100W-J
R 166	1742-101-721	1/8W	100W-J
R 173	1742-101-721	1/8W	100W-J
R 174	1742-101-721	1/8W	100W-J
R 177	1742-101-721	1/8W	100W-J
R 178	1742-101-721	1/8W	100W-J
R 181	1742-101-721	1/8W	100W-J
R 182	1742-101-721	1/8W	100W-J
R 213	1742-101-721	1/8W	100W-J
R 214	1742-101-721	1/8W	100W-J
R 217	1742-101-721	1/8W	100W-J
R 218	1742-101-721	1/8W	100W-J
R 221	1742-101-721	1/8W	100W-J
R 222	1742-101-721	1/8W	100W-J
R 237	1742-101-721	1/8W	100W-J
R 238	1742-101-721	1/8W	100W-J
R 241	1742-101-721	1/8W	100W-J
R 242	1742-101-721	1/8W	100W-J
R 245	1742-101-721	1/8W	100W-J
R 246	1742-101-721	1/8W	100W-J
R 261	1742-102-721	1/8W	1KW-J
R 262	1742-102-721	1/8W	1KW-J
R 263	1742-102-721	1/8W	1KW-J
R 279	1742-102-721	1/8W	1KW-J
R 280	1742-102-721	1/8W	1KW-J
R 281	1742-102-721	1/8W	1KW-J
R 285	1742-102-721	1/8W	1KW-J
R 286	1742-102-721	1/8W	1KW-J
R 287	1742-102-721	1/8W	1KW-J
R 291	1742-102-721	1/8W	1KW-J
R 292	1742-102-721	1/8W	1KW-J
R 293	1742-102-721	1/8W	1KW-J
R 297	1742-102-721	1/8W	1KW-J
R 298	1742-102-721	1/8W	1KW-J
R 299	1742-102-721	1/8W	1KW-J
R 303	1742-102-721	1/8W	1KW-J
R 304	1742-102-721	1/8W	1KW-J
R 305	1742-102-721	1/8W	1KW-J
R 189	1742-102-721	1/8W	1KW-J
R 190	1742-102-721	1/8W	1KW-J
R 229	1742-102-721	1/8W	1KW-J
R 230	1742-102-721	1/8W	1KW-J
R 253	1742-102-721	1/8W	1KW-J

REF NO.	PART NO	DESCRIPTION	
R 254	1742-102-721	1/8W	1KW-J
R 267	1742-102-721	1/8W	1KW-J
R 227	1742-822-721	1/8W	8.2KW-J
R 228	1742-822-721	1/8W	8.2KW-J
R 251	1742-822-721	1/8W	8.2KW-J
R 252	1742-822-721	1/8W	8.2KW-J
R 311	1742-103-721	1/8W	10KW-J
R 312	1742-103-721	1/8W	10KW-J
R 161	1742-152-721	1/8W	1.5KW-J
R 162	1742-152-721	1/8W	1.5KW-J
R 169	1742-152-721	1/8W	1.5KW-J
R 170	1742-152-721	1/8W	1.5KW-J
R 195	1742-183-721	1/8W	18KW-J
R 235	1742-183-721	1/8W	18KW-J
R 259	1742-183-721	1/8W	18KW-J
R 310	1742-183-721	1/8W	18KW-J
R 211	1742-183-721	1/8W	18KW-J
R 196	1742-223-721	1/8W	22KW-J
R 212	1742-223-721	1/8W	22KW-J
R 236	1742-223-721	1/8W	22KW-J
R 260	1742-223-721	1/8W	22KW-J
R 309	1742-223-721	1/8W	22KW-J
R 103	1742-224-721	1/8W	220KW-J
R 104	1742-224-721	1/8W	220KW-J
R 107	1742-224-721	1/8W	220KW-J
R 108	1742-224-721	1/8W	220KW-J
R 111	1742-224-721	1/8W	220KW-J
R 112	1742-224-721	1/8W	220KW-J
R 115	1742-224-721	1/8W	220KW-J
R 116	1742-224-721	1/8W	220KW-J
R 119	1742-224-721	1/8W	220KW-J
R 120	1742-224-721	1/8W	220KW-J
R 135	1742-224-721	1/8W	220KW-J
R 136	1742-224-721	1/8W	220KW-J
R 139	1742-224-721	1/8W	220KW-J
R 140	1742-224-721	1/8W	220KW-J
R 143	1742-224-721	1/8W	220KW-J
R 144	1742-224-721	1/8W	220KW-J
R 159	1742-224-721	1/8W	220KW-J
R 160	1742-224-721	1/8W	220KW-J
R 163	1742-224-721	1/8W	220KW-J
R 164	1742-224-721	1/8W	220KW-J
R 167	1742-224-721	1/8W	220KW-J
R 168	1742-224-721	1/8W	220KW-J
R 171	1742-224-721	1/8W	220KW-J
R 172	1742-224-721	1/8W	220KW-J
R 175	1742-224-721	1/8W	220KW-J
R 176	1742-224-721	1/8W	220KW-J
R 179	1742-224-721	1/8W	220KW-J
R 180	1742-224-721	1/8W	220KW-J
R 183	1742-224-721	1/8W	220KW-J
R 184	1742-224-721	1/8W	220KW-J
R 191	1742-224-721	1/8W	220KW-J
R 192	1742-224-721	1/8W	220KW-J
R 215	1742-224-721	1/8W	220KW-J
R 216	1742-224-721	1/8W	220KW-J
R 219	1742-224-721	1/8W	220KW-J
R 220	1742-224-721	1/8W	220KW-J
R 223	1742-224-721	1/8W	220KW-J
R 224	1742-224-721	1/8W	220KW-J
R 231	1742-224-721	1/8W	220KW-J
R 232	1742-224-721	1/8W	220KW-J
R 239	1742-224-721	1/8W	220KW-J
R 240	1742-224-721	1/8W	220KW-J
R 243	1742-224-721	1/8W	220KW-J
R 244	1742-224-721	1/8W	220KW-J
R 247	1742-224-721	1/8W	220KW-J
R 248	1742-224-721	1/8W	220KW-J
R 255	1742-224-721	1/8W	220KW-J

REF NO.	PART NO	DESCRIPTION	
R 256	1742-224-721	1/8W	220KW-J
R 147	1742-224-721	1/8W	220KW-J
R 148	1742-224-721	1/8W	220KW-J
R 151	1742-224-721	1/8W	220KW-J
R152	1742-224-721	1/8W	220KW-J
R 155	1742-224-721	1/8W	220KW-J
R 156	1742-224-721	1/8W	220KW-J
R 199	1742-224-721	1/8W	220KW-J
R 200	1742-224-721	1/8W	220KW-J
R 207	1742-224-721	1/8W	220KW-J
R 208	1742-224-721	1/8W	220KW-J
R 101	1742-331-721	1/8W	330W-J
R 102	1742-331-721	1/8W	330W-J
R 105	1742-331-721	1/8W	330W-J
R 106	1742-331-721	1/8W	330W-J
R 109	1742-331-721	1/8W	330W-J
R 110	1742-331-721	1/8W	330W-J
R 113	1742-331-721	1/8W	330W-J
R 114	1742-331-721	1/8W	330W-J
R 117	1742-331-721	1/8W	330W-J
R 118	1742-331-721	1/8W	330W-J
R 193	1742-331-721	1/8W	330W-J
R 194	1742-331-721	1/8W	330W-J
R 233	1742-331-721	1/8W	330W-J
R 234	1742-331-721	1/8W	330W-J
R 257	1742-331-721	1/8W	330W-J
R 258	1742-331-721	1/8W	330W-J
R 209	1742-331-721	1/8W	330W-J
R 210	1742-331-721	1/8W	330W-J
R 187	1742-333-721	1/8W	33KW-J
R 188	1742-333-721	1/8W	33KW-J
R 185	1742-473-721	1/8W	47KW-J
R 186	1742-473-721	1/8W	47KW-J
R 225	1742-473-721	1/8W	47KW-J
R 226	1742-473-721	1/8W	47KW-J
R 249	1742-473-721	1/8W	47KW-J
R 250	1742-473-721	1/8W	47KW-J
R 264	1742-473-721	1/8W	47KW-J
R 265	1742-473-721	1/8W	47KW-J
R 266	1742-473-721	1/8W	47KW-J
R 282	1742-473-721	1/8W	47KW-J
R 283	1742-473-721	1/8W	47KW-J
R 284	1742-473-721	1/8W	47KW-J
R 288	1742-473-721	1/8W	47KW-J
R 289	1742-473-721	1/8W	47KW-J
R 290	1742-473-721	1/8W	47KW-J
R 294	1742-473-721	1/8W	47KW-J
R 295	1742-473-721	1/8W	47KW-J
R 296	1742-473-721	1/8W	47KW-J
R 300	1742-473-721	1/8W	47KW-J
R 301	1742-473-721	1/8W	47KW-J
R 302	1742-473-721	1/8W	47KW-J
R 306	1742-473-721	1/8W	47KW-J
R 307	1742-473-721	1/8W	47KW-J
R 308	1742-473-721	1/8W	47KW-J
R 270	1742-473-721	1/8W	47KW-J
R 271	1742-473-721	1/8W	47KW-J
R 272	1742-473-721	1/8W	47KW-J
R 276	1742-473-721	1/8W	47KW-J
R 277	1742-473-722	1/8W	47KW-J
R 278	1742-473-723	1/8W	47KW-J
R 201	1742-473-724	1/8W	47KW-J
R 202	1742-473-725	1/8W	47KW-J
R 313	1742-682-721	1/8W	6.8KW-J
R 314	1742-682-721	1/8W	6.8KW-J
R 203	1742-682-721	1/8W	6.8KW-J
R 204	1742-682-721	1/8W	6.8KW-J

REF NO.	PART NO	DESCRIPTION		
CAPACITORS				
C 199	1832-104-002	CERA/AX	50V	0.1uF-Z
C 200	1832-104-002	CERA/AX	50V	0.1uF-Z
C 203	1832-104-002	CERA/AX	50V	0.1uF-Z
C 204	1832-104-002	CERA/AX	50V	0.1uF-Z
C 211	1832-104-002	CERA/AX	50V	0.1uF-Z
C 212	1832-104-002	CERA/AX	50V	0.1uF-Z
C 213	1832-104-002	CERA/AX	50V	0.1uF-Z
C 214	1832-104-002	CERA/AX	50V	0.1uF-Z
C 215	1832-104-002	CERA/AX	50V	0.1uF-Z
C 216	1832-104-002	CERA/AX	50V	0.1uF-Z
C 217	1832-104-002	CERA/AX	50V	0.1uF-Z
C 218	1832-104-002	CERA/AX	50V	0.1uF-Z
C 219	1832-104-002	CERA/AX	50V	0.1uF-Z
C 220	1832-104-002	CERA/AX	50V	0.1uF-Z
C 221	1832-104-002	CERA/AX	50V	0.1uF-Z
C 101	1832-121-712	CERA/AX	50V	120pF-J
C 102	1832-121-712	CERA/AX	50V	120pF-J
C 103	1832-121-712	CERA/AX	50V	120pF-J
C 104	1832-121-712	CERA/AX	50V	120pF-J
C 105	1832-121-712	CERA/AX	50V	120pF-J
C 106	1832-121-712	CERA/AX	50V	120pF-J
C 107	1832-121-712	CERA/AX	50V	120pF-J
C 108	1832-121-712	CERA/AX	50V	120pF-J
C 109	1832-121-712	CERA/AX	50V	120pF-J
C 110	1832-121-712	CERA/AX	50V	120pF-J
C 173	1832-471-712	CERA/AX	50V	470pF-J
C 174	1832-471-712	CERA/AX	50V	470pF-J
C 175	1832-471-712	CERA/AX	50V	470pF-J
C 176	1832-471-712	CERA/AX	50V	470pF-J
C 177	1832-471-712	CERA/AX	50V	470pF-J
C 178	1832-471-712	CERA/AX	50V	470pF-J
C 179	1832-471-712	CERA/AX	50V	470pF-J
C 180	1832-471-712	CERA/AX	50V	470pF-J
C 181	1832-471-712	CERA/AX	50V	470pF-J
C 182	1832-471-712	CERA/AX	50V	470pF-J
C 183	1832-471-712	CERA/AX	50V	470pF-J
C 184	1832-471-712	CERA/AX	50V	470pF-J
C 188	1832-471-712	CERA/AX	50V	470pF-J
C 189	1832-471-712	CERA/AX	50V	470pF-J
C 190	1832-471-712	CERA/AX	50V	470pF-J
C 194	1832-471-712	CERA/AX	50V	470pF-J
C 195	1832-471-712	CERA/AX	50V	470pF-J
C 196	1832-471-712	CERA/AX	50V	470pF-J
C 135	1862-100-804	ELECT	50V	10uF-M
C 136	1862-100-804	ELECT	50V	10uF-M
C 159	1862-100-804	ELECT	50V	10uF-M
C 160	1862-100-804	ELECT	50V	10uF-M
C 169	1862-100-804	ELECT	50V	10uF-M
C 170	1862-100-804	ELECT	50V	10uF-M
C 197	1862-470-604	ELECT	25V	47uF-M
C 198	1862-470-604	ELECT	25V	47uF-M
C 201	1862-470-604	ELECT	25V	47uF-M
C 202	1862-470-604	ELECT	25V	47uF-M
C 205	1862-470-604	ELECT	25V	47uF-M
C 209	1862-470-604	ELECT	25V	47uF-M
C 210	1862-470-604	ELECT	25V	47uF-M
C 117	1862-4R7-804	ELECT	50V	4.7uF-M
C 118	1862-4R7-804	ELECT	50V	4.7uF-M
C 119	1862-4R7-804	ELECT	50V	4.7uF-M
C 120	1862-4R7-804	ELECT	50V	4.7uF-M
C 129	1862-4R7-804	ELECT	50V	4.7uF-M
C 130	1862-4R7-804	ELECT	50V	4.7uF-M
C 131	1862-4R7-804	ELECT	50V	4.7uF-M
C 132	1862-4R7-804	ELECT	50V	4.7uF-M
C 133	1862-4R7-804	ELECT	50V	4.7uF-M
C 134	1862-4R7-804	ELECT	50V	4.7uF-M

REF NO.	PART NO	DESCRIPTION		
C 137	1862-4R7-804	ELECT	50V	4.7uF-M
C 138	1862-4R7-804	ELECT	50V	4.7uF-M
C 145	1862-4R7-804	ELECT	50V	4.7uF-M
C 146	1862-4R7-804	ELECT	50V	4.7uF-M
C 147	1862-4R7-804	ELECT	50V	4.7uF-M
C 148	1862-4R7-804	ELECT	50V	4.7uF-M
C 149	1862-4R7-804	ELECT	50V	4.7uF-M
C 150	1862-4R7-804	ELECT	50V	4.7uF-M
C 151	1862-4R7-804	ELECT	50V	4.7uF-M
C 152	1862-4R7-804	ELECT	50V	4.7uF-M
C 153	1862-4R7-804	ELECT	50V	4.7uF-M
C 154	1862-4R7-804	ELECT	50V	4.7uF-M
C 155	1862-4R7-804	ELECT	50V	4.7uF-M
C 156	1862-4R7-804	ELECT	50V	4.7uF-M
C 157	1862-4R7-804	ELECT	50V	4.7uF-M
C 158	1862-4R7-804	ELECT	50V	4.7uF-M
C 161	1862-4R7-804	ELECT	50V	4.7uF-M
C 162	1862-4R7-804	ELECT	50V	4.7uF-M
C 163	1862-4R7-804	ELECT	50V	4.7uF-M
C 164	1862-4R7-804	ELECT	50V	4.7uF-M
C 165	1862-4R7-804	ELECT	50V	4.7uF-M
C 166	1862-4R7-804	ELECT	50V	4.7uF-M
C 167	1862-4R7-804	ELECT	50V	4.7uF-M
C 168	1862-4R7-804	ELECT	50V	4.7uF-M
C 171	1862-4R7-804	ELECT	50V	4.7uF-M
C 172	1862-4R7-804	ELECT	50V	4.7uF-M
C 123	1862-4R7-804	ELECT	50V	4.7uF-M
WAFERS				
WA 101	2111-023-003	3P		5267-03A
HU 112	2121-605-007	7P		JE-605-07
HU 115	2121-605-007	7P		JE-605-07
HU 116	2121-605-007	7P		JE-605-07
HU 114	2121-605-011	11P		JE-605-11
HU 117	2121-605-011	11P		JE-605-11
HU 121	2121-605-011	11P		JE-605-11
MISCELLANEOUS				
CN 107	2141-090-050	WIRE 9P,1007#26,200m/m		
JP 101	1514-000-021	JACK-RCA;4P,JW-4104R		
JP 102	1514-000-021	JACK-RCA;4P,JW-4104R		
JP 103	1514-060-001	PIN JACK;6P,JW-4105R		

0112-011-1532 FRONT P.C.BOARD

REF NO.	PART NO	DESCRIPTION		
INTEGRATED CIRCUITS				
IC 901	1216-828-141	IC	CXP828P60Q-141C MAIN MI-COM	
IC 902	1211-455-001	IC	NJM4558L	OP AMP
TRANSISTORS				
Q 902	1243-103-004	KRC103M		NPN
Q 903	1243-103-004	KRC103M		NPN
Q 934	1243-104-014	KRC104M		NPN
Q 921	1243-319-001	KTC3198-GR		NPN
Q 932	1243-319-001	KTC3198-GR		NPN
Q 901	1243-319-007	KTC3199-GR		NPN
Q 904	1243-319-007	KTC3199-GR		NPN
Q 905	1243-319-007	KTC3199-GR		NPN
Q 906	1243-319-007	KTC3199-GR		NPN
Q 907	1243-319-007	KTC3199-GR		NPN
Q 908	1243-319-007	KTC3199-GR		NPN
Q 909	1243-319-007	KTC3199-GR		NPN
Q 910	1243-319-007	KTC3199-GR		NPN
Q 911	1243-319-007	KTC3199-GR		NPN
Q 912	1243-319-007	KTC3199-GR		NPN
Q 913	1243-319-007	KTC3199-GR		NPN
Q 914	1243-319-007	KTC3199-GR		NPN

REF NO.	PART NO	DESCRIPTION		
Q 914	1243-319-007	KTC3199-GR		NPN
Q 915	1243-319-007	KTC3199-GR		NPN
Q 916	1243-319-007	KTC3199-GR		NPN
Q 917	1243-319-007	KTC3199-GR		NPN
Q 918	1243-319-007	KTC3199-GR		NPN
Q 919	1243-319-007	KTC3199-GR		NPN
Q 936	1244-102-003	KRA102M		PNP
Q 933	1244-104-011	KRA104M		PNP
Q 935	1244-104-011	KRA104M		PNP

DIODES

D 901	1252-000-017	1SS133 ,	SW	
D 902	1252-000-017	1SS133 ,	SW	
D 903	1252-000-017	1SS133 ,	SW	
D 904	1252-000-017	1SS133 ,	SW	
D 905	1252-000-017	1SS133 ,	SW	
D 906	1252-000-017	1SS133 ,	SW	
D 907	1252-000-017	1SS133 ,	SW	
D 908	1252-000-017	1SS133 ,	SW	
D 909	1252-000-017	1SS133 ,	SW	
D 986	1252-000-017	1SS133 ,	SW	
D 910	1252-000-017	1SS133 ,	SW	
D 911	1252-000-017	1SS133 ,	SW	
D 912	1252-000-017	1SS133 ,	SW	
D 913	1252-000-017	1SS133 ,	SW	
D 915	1252-000-017	1SS133 ,	SW	
D 917	1252-000-017	1SS133 ,	SW	
D 918	1252-000-017	1SS133 ,	SW	
D 919	1252-000-017	1SS133 ,	SW	
D 920	1252-000-017	1SS133 ,	SW	
D 940	1252-000-017	1SS133 ,	SW	
D 964	1252-000-017	1SS133 ,	SW	
D 985	1252-000-017	1SS133 ,	SW	
OPT2	1252-000-017	1SS133 ,	SW	**IB/AB**
OPT5	1252-000-017	1SS133 ,	SW	**IB/AB**
LED 902	1271-000-037	LED SLR-342VR3		

Stand-By P.C.Board

RESISTORS(CARBON)

R 976	1742-100-721	1/8W	10W-J
R 977	1742-100-721	1/8W	10W-J
R 902	1742-102-721	1/8W	1KW-J
R 961	1742-102-721	1/8W	1KW-J
R 999	1742-102-721	1/8W	1KW-J
R 906	1742-103-721	1/8W	10KW-J
R 907	1742-103-721	1/8W	10KW-J
R 908	1742-103-721	1/8W	10KW-J
R 909	1742-103-721	1/8W	10KW-J
R 925	1742-103-721	1/8W	10KW-J
R 910	1742-104-721	1/8W	100KW-J
R 911	1742-104-721	1/8W	100KW-J
R 905	1742-105-721	1/8W	1MW-J
R 937	1742-154-721	1/8W	150KW-J
R 953	1742-182-721	1/8W	1.8KW-J
R 954	1742-182-721	1/8W	1.8KW-J
R 955	1742-392-721	1/8W	3.9KW-J
R 927	1742-183-721	1/8W	18KW-J
R 931	1742-221-721	1/8W	220W-J
R 932	1742-221-721	1/8W	220W-J
R 904	1742-222-721	1/8W	2.2KW-J
R 912	1742-224-721	1/8W	220KW-J
R 913	1742-224-721	1/8W	220KW-J
R 921	1742-224-721	1/8W	220KW-J
R 922	1742-224-721	1/8W	220KW-J
R 933	1742-224-721	1/8W	220KW-J
R 934	1742-224-721	1/8W	220KW-J
R 919	1742-331-721	1/8W	330W-J
R 920	1742-331-721	1/8W	330W-J
R 955	1742-392-721	1/8W	3.9KW-J

REF NO.	PART NO	DESCRIPTION	
R 956	1742-392-721	1/8W	3.9KW-J
R 901	1742-471-721	1/8W	470W-J
R 914	1742-473-721	1/8W	47KW-J
R 915	1742-473-721	1/8W	47KW-J
R 916	1742-473-721	1/8W	47KW-J
R 917	1742-473-721	1/8W	47KW-J
R 918	1742-473-721	1/8W	47KW-J
R 972	1742-473-721	1/8W	47KW-J
R 978	1742-473-721	1/8W	47KW-J
R 979	1742-473-721	1/8W	47KW-J
R 924	1742-473-721	1/8W	47KW-J
R 959	1742-473-721	1/8W	47KW-J
R 969	1742-473-721	1/8W	47KW-J
R 970	1742-473-721	1/8W	47KW-J
R 923	1742-750-721	1/8W	75W-J
R 943	1742-753-721	1/8W	75KW-J
R 944	1742-753-721	1/8W	75KW-J
R 939	1742-752-721	1/8W	7.5KW-J
R 940	1742-752-721	1/8W	7.5KW-J
R 951	1742-561-721	1/8W	560W-J
R 952	1742-561-721	1/8W	560W-J
R 936	1742-154-721	1/8W	150KW-J
R 945	1742-394-721	1/8W	390KW-J
R 946	1742-394-721	1/8W	390KW-J
R 982	1742-393-721	1/8W	39KW-J
R 983	1742-393-721	1/8W	39KW-J
R 941	1742-272-721	1/8W	2.7KW-J
R 942	1742-272-721	1/8W	2.7KW-J
R 962	1744-331-731	1/4W	330W-J
R 980	1744-4R7-731	1/4W	4.7W-J
R 981	1744-4R7-731	1/4W	4.7W-J

CAPACITORS

C 979	1822-104-822	CERA/RA	50V	0.1uF-K
C 980	1822-104-822	CERA/RA	50V	0.1uF-K
C 901	1832-220-772	CERA/AX	50V	22PF-J
C 902	1832-220-772	CERA/AX	50V	22PF-J
C 910	1832-102-772	CERA/AX	50V	0.001uF-J
C 911	1832-102-772	CERA/AX	50V	0.001uF-J
C 912	1832-102-772	CERA/AX	50V	0.001uF-J
C 913	1832-102-772	CERA/AX	50V	0.001uF-J
C 954	1832-101-712	CERA/AX	50V	100PF-J
C 903	1832-104-002	CERA/AX	50V	0.1uF-Z
C 905	1832-104-002	CERA/AX	50V	0.1uF-Z
C 907	1832-104-002	CERA/AX	50V	0.1uF-Z
C 909	1832-104-002	CERA/AX	50V	0.1uF-Z
C 914	1832-104-002	CERA/AX	50V	0.1uF-Z
C 915	1832-104-002	CERA/AX	50V	0.1uF-Z
C 918	1832-104-002	CERA/AX	50V	0.1uF-Z
C 922	1832-104-002	CERA/AX	50V	0.1uF-Z
C 919	1832-121-712	CERA/AX	50V	20pF-J
C 920	1832-121-712	CERA/AX	50V	20pF-J
C 908	1832-471-712	CERA/AX	50V	470pF-J
C 945	1832-221-822	CERA/AX	50V	220pF-J
C 946	1832-221-822	CERA/AX	50V	220pF-J
C 933	1832-151-772	CERA/AX	50V	150PF-J
C 934	1832-151-772	CERA/AX	50V	150PF-J
C 904	1862-220-604	ELECT	25V	22uF-M
C 917	1862-221-506	ELECT	16V	220uF-M
C 977	1862-470-814	ELECT	50V	47uF-M
C 931	1862-4R7-804	ELECT	50V	4.7uF-M
C 932	1862-4R7-804	ELECT	50V	4.7uF-M
C 941	1862-4R7-804	ELECT	50V	4.7uF-M
C 942	1862-4R7-804	ELECT	50V	4.7uF-M
C 951	1862-4R7-804	ELECT	50V	4.7uF-M
C 952	1862-4R7-804	ELECT	50V	4.7uF-M
C 953	1862-4R7-804	ELECT	50V	4.7uF-M
C 955	1864-010-804	ELECT	50V	1.0uF-M
C 956	1864-010-804	ELECT	50V	1.0uF-M

REF NO.	PART NO	DESCRIPTION
C 961	1862-220-804	ELECT 50V 22uF-M
C 962	1862-220-804	ELECT 50V 22uF-M
C 939	1879-823-712	FILM 100V 0.082uF-J
C 940	1879-823-712	FILM 100V 0.082uF-J
C 937	1879-333-712	FILM 100V 0.033uF-J
C 938	1879-333-712	FILM 100V 0.033uF-J
C 947	1879-393-712	FILM 100V 0.039uF-J
C 948	1879-393-712	FILM 100V 0.039uF-J
C 943	1879-822-761	FILM 400V 0.0082uF-J
C 944	1879-822-761	FILM 400V 0.0082uF-J
C 906	1881-10A-001	SCAP 5.5V 0.1F
C 968	1825-000-010	AC 250V 0.0047uF-M
C 969	1832-104-002	CERA/AX 0.1F-Z
C 970	1832-104-002	CERA/AX 0.1F-Z

WAFERS

REF NO.	PART NO	DESCRIPTION
WA 903	2111-023-002	2P 5267-02A
WA 904	2111-023-002	2P 5267-02A
CN 924	2113-022-007	22P FFC
CN 923	2113-030-007	30P FFC

WIRES

REF NO.	PART NO	DESCRIPTION
TO DSP	2133-220-002	FFC;22P,320
TO MAIN	2133-300-002	FFC;30P,280
T911<->T912	2141-010-051	IP, 1007#24,100m/m
T 901	2141-020-114	1P,1007#22,150m/m
T 902	2141-020-114	1P,1007#22,150m/m
T 903	2141-020-114	1P,1007#22,150m/m
T 904	2141-020-114	1P,1007#22,150m/m
CN 904	2141-020-600	2P,1007#26,100m/m
CN 908	2141-040-011	4P,1533#26,350m/m
CN 911	2141-060-013	6P,1533#26,300m/m
CN 986	2141-070-016	7P,1007#24,430m/m
CN 907	2141-080-117	8P,500m/m

MISCELLANEOUS

REF NO.	PART NO	DESCRIPTION
	5226-003-010	CASE,SHIELD(F)
	5451-003-020	CUSHION-FLT
RMT 901	1264-000-020	SENSOR-REMOTE LTM9433D
FLT 901	1277-000-012	VFD CM1684CB
X 901	1352-000-003	X-TAL;ATS-49/U,9.8304MHz
JP 901	1514-030-003	JACK-PIN 3P(Video3)
JP 961	1515-000-010	JACK-H/P
VR 901	1640-111-001	VR-ENCODER
SW 901	1671-000-020	SW-TACT SKHV10910A,2P
SW 902	1671-000-020	SW-TACT SKHV10910A,2P
SW 903	1671-000-020	SW-TACT SKHV10910A,2P
SW 904	1671-000-020	SW-TACT SKHV10910A,2P
SW 905	1671-000-020	SW-TACT SKHV10910A,2P
SW 906	1671-000-020	SW-TACT SKHV10910A,2P
SW 907	1671-000-020	SW-TACT SKHV10910A,2P
SW 908	1671-000-020	SW-TACT SKHV10910A,2P
SW 909	1671-000-020	SW-TACT SKHV10910A,2P
SW 910	1671-000-020	SW-TACT SKHV10910A,2P
SW 911	1671-000-020	SW-TACT SKHV10910A,2P
SW 912	1671-000-020	SW-TACT SKHV10910A,2P
SW 913	1671-000-020	SW-TACT SKHV10910A,2P
SW 914	1671-000-020	SW-TACT SKHV10910A,2P
SW 915	1671-000-020	SW-TACT SKHV10910A,2P
SW 916	1671-000-020	SW-TACT SKHV10910A,2P
SW 917	1671-000-020	SW-TACT SKHV10910A,2P
SW 918	1671-000-020	SW-TACT SKHV10910A,2P
SW 919	1671-000-020	SW-TACT SKHV10910A,2P
SW 920	1671-000-020	SW-TACT SKHV10910A,2P
SW 921	1671-000-020	SW-TACT SKHV10910A,2P
SW 922	1671-000-020	SW-TACT SKHV10910A,2P
SW 923	1671-000-020	SW-TACT SKHV10910A,2P
SW 924	1671-000-020	SW-TACT SKHV10910A,2P
SW 925	1671-000-020	SW-TACT SKHV10910A,2P

REF NO.	PART NO	DESCRIPTION
SW 926	1671-000-020	SW-TACT SKHV10910A,2P
SW 927	1671-000-020	SW-TACT SKHV10910A,2P
SW 928	1671-000-020	SW-TACT SKHV10910A,2P
SW 929	1671-000-020	SW-TACT SKHV10910A,2P
SW 930	1671-000-020	SW-TACT SKHV10910A,2P
SW 933	1671-000-020	SW-TACT SKHV10910A,2P
VR 902	1721-503-212	VR-ROTARY 100KC
VR 903	1721-503-212	VR-ROTARY 100KC
VR 904	1721-503-213	VR-ROTARY 100KMN

0112-011-1533 POWER P.C.BOARD

REF NO.	PART NO	DESCRIPTION
SW932	1671-000-017	SW-POWER SY-16-32-2
C968	1825-000-010	AC AC250V 0.0047uF-M
CN983	2111-026-002	2P 35328-0210
CN983↔S	2141-010-167	2P, 1672#18,500m/m

0112-011-1534 STAND-BY P.C.BOARD

REF NO.	PART NO	DESCRIPTION
CN987	2141-030-003	3P, 1007$24
LED901	1271-000-061	LED SLR-54MVW
SW931	1671-000-020	SW-TACT SKHV10910A,2P
CN903	2141-020-118	2P, 1007#26, 100m/m

0112-011-153 HEAD PHONE P.C.BOARD

REF NO.	PART NO	DESCRIPTION	
CN901	2141-050-015	5P, 1007#26/2547, 600n/n	
C969	1832-104-002	CERA/AX 50V 0.1uF-Z	
C970	1832-104-002	CERA/AX 50V 0.1uF-Z	
C982	1832-152-983	CERA/AX 50V 0.0015uF-M	**IB/AB**
C983	1832-152-983	CERA/AX 50V 0.0015uF-M	**IB/AB**
C982	1832-152-983	CERA/AX 50V 0.0015uF-M	**IB/AB**
C983	1832-152-983	CERA/AX 50V 0.0015uF-M	**IB/AB**

0112-011-154 DSP1 P.C.BOARD

INTEGRATED CIRCUITS

REF NO.	PART NO	DESCRIPTION
IC 712	1212-004-001	IC 74VHC04F HEX INVERTER
IC 718	1212-033-001	IC 3.3V REGULATOR
IC 717	1212-074-001	IC TC74VHC74F D-FLIP FLOP
IC 719	1212-132-001	IC TC74VHC132F NAND GATE
IC 711	1212-244-001	IC 74VHC244F BUFFER
IC 714	1212-244-001	IC 74VHC244F BUFFER
IC 709	1212-422-001	IC CS4226,5.5V CODEC
IC 710	1212-492-002	IC CS4926,3.3V DSP
IC 713	1212-534-006	IC MSM534031E,3.3V ROM
IC 715	1212-574-001	IC 74VHC574F D-FILP FLOP
IC 716	1212-574-001	IC 74VHC574F D-FILP FLOP
IC 701	1215-072-001	IC NJM072M OP AMP
IC 705	1215-072-001	IC NJM072M OP AMP
IC 706	1215-072-001	IC NJM072M OP AMP
IC 707	1215-072-001	IC NJM072M OP AMP
IC 702	1215-455-001	IC NJM4558M OP AMP
IC 703	1215-455-001	IC NJM4558M OP AMP
IC 704	1215-455-001	IC NJM4558M OP AMP
IC 708	1215-455-001	IC NJM4558M OP AMP

TRANSISTORS

REF NO.	PART NO	DESCRIPTION	
Q 703	1243-101-018	KRC101M	NPN
Q 716	1243-101-018	KRC101M	NPN
Q 704	1244-102-003	KRA102M	NPN
Q 701	1244-126-004	KTA1266-GR	NPN
Q 702	1244-126-004	KTA1266-GR	NPN
Q 705	1244-126-004	KTA1266-GR	NPN
Q 707	1243-130-003	KTD1302	NPN
Q 708	1243-130-003	KTD1302	NPN
Q 709	1243-130-003	KTD1302	NPN
Q 710	1243-130-003	KTD1302	NPN
Q 712	1243-130-003	KTD1302	NPN
Q 713	1243-130-003	KTD1302	NPN
Q 714	1243-130-003	KTD1302	NPN

REF NO.	PART NO	DESCRIPTION		
Q 715	1243-130-003	KTD1302		NPN
		DIODE		
D 01	1252-000-017	1SS133 , SW.		
		RESISTORS(CARBON)		
R 71	1742-100-721	1/8W	10W-J	
R 72	1742-100-721	1/8W	10W-J	
R 73	1742-100-721	1/8W	10W-J	
R 74	1742-100-721	1/8W	10W-J	
R 75	1742-100-721	1/8W	10W-J	
R 76	1742-100-721	1/8W	10W-J	
R 01	1742-101-721	1/8W	100W-J	
R 03	1742-101-721	1/8W	100W-J	
R 06	1742-101-721	1/8W	100W-J	
R 54	1742-102-721	1/8W	1KW-J	
R 55	1742-102-721	1/8W	1KW-J	
R 56	1742-102-721	1/8W	1KW-J	
R 15	1742-103-721	1/8W	10KW-J	
R 16	1742-103-721	1/8W	10KW-J	
R 17	1742-103-721	1/8W	10KW-J	
R 20	1742-103-721	1/8W	10KW-J	
R 21	1742-103-721	1/8W	10KW-J	
R 22	1742-103-721	1/8W	10KW-J	
R 23	1742-103-721	1/8W	10KW-J	
R 24	1742-103-721	1/8W	10KW-J	
R 25	1742-103-721	1/8W	10KW-J	
R 26	1742-103-721	1/8W	10KW-J	
R 28	1742-103-721	1/8W	10KW-J	
R 30	1742-103-721	1/8W	10KW-J	
R 31	1742-103-721	1/8W	10KW-J	
R 33	1742-103-721	1/8W	10KW-J	
R 37	1742-103-721	1/8W	10KW-J	
R 40	1742-103-721	1/8W	10KW-J	
R 41	1742-103-721	1/8W	10KW-J	
R 52	1742-103-721	1/8W	10KW-J	
R 58	1742-103-721	1/8W	10KW-J	
R 53	1742-220-721	1/8W	22W-J	
R 60	1742-220-721	1/8W	22W-J	
R 05	1742-222-721	1/8W	2.2KW-J	
R 10	1742-222-721	1/8W	2.2KW-J	
R 13	1742-222-721	1/8W	2.2KW-J	
R 50	1742-222-721	1/8W	2.2KW-J	
R 51	1742-222-721	1/8W	2.2KW-J	
R 57	1742-222-721	1/8W	2.2KW-J	
R 59	1742-271-721	1/8W	270W-J	
R 08	1742-330-721	1/8W	33W-J	
R 09	1742-330-721	1/8W	33W-J	
R 27	1742-330-721	1/8W	33W-J	
R 49	1742-433-721	1/8W	43KW-J	
R 38	1742-470-721	1/8W	47W-J	
R 39	1742-470-721	1/8W	47W-J	
R 11	1742-472-721	1/8W	4.7KW-J	
R 12	1742-472-721	1/8W	4.7KW-J	
R 14	1742-472-721	1/8W	4.7KW-J	
R 29	1742-472-721	1/8W	4.7KW-J	
R 32	1742-472-721	1/8W	4.7KW-J	
R 797	1742-472-721	1/8W	4.7KW-J	
R 04	1742-473-721	1/8W	47KW-J	
R 02	1742-750-721	1/8W	75W-J	
R 07	1744-4R7-731	1/4W	4.7W-J	
		RESISTORS(CHIP)		
R 707	1746-101-771	1/10	100W-J	
R 708	1746-101-771	1/10	100W-J	
R 717	1746-101-771	1/10	100W-J	
R 718	1746-101-771	1/10	100W-J	
R 719	1746-101-771	1/10	100W-J	
R 720	1746-101-771	1/10	100W-J	

REF NO.	PART NO	DESCRIPTION	
R 729	1746-101-771	1/10	100W-J
R 730	1746-101-771	1/10	100W-J
R 731	1746-101-771	1/10	100W-J
R 732	1746-101-771	1/10	100W-J
R 741	1746-101-771	1/10	100W-J
R 742	1746-101-771	1/10	100W-J
R 705	1746-101-771	1/10	100W-J
R 706	1746-101-771	1/10	100W-J
R 703	1746-103-771	1/10	10KW-J
R 704	1746-103-771	1/10	10KW-J
R 81	1746-102-771	1/10	1KW-J
R 82	1746-102-771	1/10	1KW-J
R 83	1746-104-771	1/10	100KW-J
R 84	1746-104-771	1/10	100KW-J
R 743	1746-104-771	1/10	100KW-J
R 744	1746-104-771	1/10	100KW-J
R 757	1746-104-771	1/10	100KW-J
R 758	1746-104-771	1/10	100KW-J
R 771	1746-104-771	1/10	100KW-J
R 772	1746-104-771	1/10	100KW-J
R 77	1746-222-771	1/10	2.2KW-J
R 78	1746-222-771	1/10	2.2KW-J
R 79	1746-222-771	1/10	2.2KW-J
R 80	1746-222-771	1/10	2.2KW-J
R 92	1746-222-771	1/10	2.2KW-J
R 93	1746-222-771	1/10	2.2KW-J
R 94	1746-222-771	1/10	2.2KW-J
R 95	1746-222-771	1/10	2.2KW-J
R 755	1746-123-771	1/10	12KW-J
R 756	1746-123-771	1/10	12KW-J
R 770	1746-123-771	1/10	12KW-J
R 783	1746-123-771	1/10	12KW-J
R 784	1746-123-771	1/10	12KW-J
R 748	1746-152-771	1/10	1.5KW-J
R 750	1746-152-771	1/10	1.5KW-J
R 747	1746-152-771	1/10	1.5KW-J
R 749	1746-152-771	1/10	1.5KW-J
R 762	1746-152-771	1/10	1.5KW-J
R 764	1746-152-771	1/10	1.5KW-J
R 761	1746-152-771	1/10	1.5KW-J
R 763	1746-152-771	1/10	1.5KW-J
R 776	1746-152-771	1/10	1.5KW-J
R 778	1746-152-771	1/10	1.5KW-J
R 775	1746-152-771	1/10	1.5KW-J
R 777	1746-152-771	1/10	1.5KW-J
R 714	1746-183-771	1/10	18KW-J
R 701	1746-203-771	1/10	20KW-J
R 702	1746-203-771	1/10	20KW-J
R 709	1746-224-771	1/10	220KW-J
R 710	1746-224-771	1/10	220KW-J
R 715	1746-224-771	1/10	220KW-J
R 716	1746-224-771	1/10	220KW-J
R 721	1746-224-771	1/10	220KW-J
R 722	1746-224-771	1/10	220KW-J
R 727	1746-224-771	1/10	220KW-J
R 728	1746-224-771	1/10	220KW-J
R733	1746-224-771	1/10	220KW-J
R734	1746-224-771	1/10	220KW-J
R 739	1746-224-771	1/10	220KW-J
R 740	1746-224-771	1/10	220KW-J
R 753	1746-272-771	1/10	2.7KW-J
R 754	1746-272-771	1/10	2.7KW-J
R 767	1746-272-771	1/10	2.7KW-J
R 768	1746-272-771	1/10	2.7KW-J
R 781	1746-272-771	1/10	2.7KW-J
R 782	1746-272-771	1/10	2.7KW-J
R 745	1746-302-771	1/10	3KW-J
R 746	1746-302-771	1/10	3KW-J
R 759	1746-302-771	1/10	3KW-J

REF NO.	PART NO	DESCRIPTION	
R 760	1746-302-771	1/10	3KW-J
R 773	1746-302-771	1/10	3KW-J
R 774	1746-302-771	1/10	3KW-J
R 711	1746-473-771	1/10	47KW-J
R 712	1746-473-771	1/10	47KW-J
R 713	1746-473-771	1/10	47KW-J
R 723	1746-473-771	1/10	47KW-J
R 724	1746-473-771	1/10	47KW-J
R 725	1746-473-771	1/10	47KW-J
R 726	1746-473-771	1/10	47KW-J
R 735	1746-473-771	1/10	47KW-J
R 736	1746-473-771	1/10	47KW-J
R 737	1746-473-771	1/10	47KW-J
R 738	1746-473-771	1/10	47KW-J
R 87	1746-683-771	1/10	68KW-J
R 88	1746-683-771	1/10	68KW-J
R 751	1746-821-771	1/10	820W-J
R 752	1746-821-771	1/10	820W-J
R 765	1746-821-771	1/10	820W-J
R 766	1746-821-771	1/10	820W-J
R 779	1746-821-771	1/10	820W-J
R 780	1746-821-771	1/10	820W-J
R 89	1746-2R2-771	1/10	2.2W-J
R 90	1746-2R2-771	1/10	2.2W-J
R 85	1746-393-771	1/10	39KW-J
R 86	1746-393-771	1/10	39KW-J
R 787	1746-102-771	1/10	1KW-J
R 788	1746-102-771	1/10	1KW-J
CAPACITORS			
C 44	1822-101-772	CERA/RA 50V	100pF-J
C 45	1822-101-772	CERA/RA 50V	100pF-J
C 01	1822-102-882	CERA/RA 50V	0.001uF-K
C 04	1822-102-882	CERA/RA 50V	0.001uF-K
C 2	1822-104-822	CERA/RA 50V	0.1uF-K
C 3	1822-104-822	CERA/RA 50V	0.1uF-K
C 6	1822-104-822	CERA/RA 50V	0.1uF-K
C 7	1822-104-822	CERA/RA 50V	0.1uF-K
C 10	1822-104-822	CERA/RA 50V	0.1uF-K
C 11	1822-104-822	CERA/RA 50V	0.1uF-K
C 15	1822-104-822	CERA/RA 50V	0.1uF-K
C 18	1822-104-822	CERA/RA 50V	0.1uF-K
C 20	1822-104-822	CERA/RA 50V	0.1uF-K
C 22	1822-104-822	CERA/RA 50V	0.1uF-K
C 24	1822-104-822	CERA/RA 50V	0.1uF-K
C 26	1822-104-822	CERA/RA 50V	0.1uF-K
C 27	1822-104-822	CERA/RA 50V	0.1uF-K
C 30	1822-104-822	CERA/RA 50V	0.1uF-K
C 32	1822-104-822	CERA/RA 50V	0.1uF-K
C 34	1822-104-822	CERA/RA 50V	0.1uF-K
C 37	1822-104-822	CERA/RA 50V	0.1uF-K
C 38	1822-104-822	CERA/RA 50V	0.1uF-K
C 40	1822-104-822	CERA/RA 50V	0.1uF-K
C 43	1822-104-822	CERA/RA 50V	0.1uF-K
C 48	1822-104-822	CERA/RA 50V	0.1uF-K
C 52	1822-104-822	CERA/RA 50V	0.1uF-K
C 53	1822-104-822	CERA/RA 50V	0.1uF-K
C 791	1822-104-822	CERA/RA 50V	0.1uF-K
C 792	1822-104-822	CERA/RA 50V	0.1uF-K
C 49	1822-152-882	CERA/RA 50V	0.0015uF-K
CAPACITORS(CHIP)			
C 703	1846-101-712	CERA 50V	100pF-J
C 704	1846-101-712	CERA 50V	100pF-J
C 735	1846-101-712	CERA 50V	100pF-J
C 736	1846-101-712	CERA 50V	100pF-J
C 752	1846-101-712	CERA 50V	100pF-J
C 767	1846-101-712	CERA 50V	100pF-J
C 768	1846-101-712	CERA 50V	100pF-J

REF NO.	PART NO	DESCRIPTION		
C 727	1846-222-882	CERA	50V	0.0022uF-K
C 728	1846-222-882	CERA	50V	0.0022uF-K
C 731	1846-222-882	CERA	50V	0.0022uF-K
C 732	1846-222-882	CERA	50V	0.0022uF-K
C 743	1846-222-882	CERA	50V	0.0022uF-K
C 744	1846-222-882	CERA	50V	0.0022uF-K
C 747	1846-222-882	CERA	50V	0.0022uF-K
C 748	1846-222-882	CERA	50V	0.0022uF-K
C 759	1846-222-882	CERA	50V	0.0022uF-K
C 760	1846-222-882	CERA	50V	0.0022uF-K
C 763	1846-222-882	CERA	50V	0.0022uF-K
C 764	1846-222-882	CERA	50V	0.0022uF-K
C 81	1846-470-712	CERA	50V	47pF-J
C 82	1846-470-712	CERA	50V	47pF-J
C 729	1846-472-882	CERA	50V	0.0047uF-K
C 730	1846-472-882	CERA	50V	0.0047uF-K
C 745	1846-472-882	CERA	50V	0.0047uF-K
C 746	1846-472-882	CERA	50V	0.0047uF-K
C 761	1846-472-882	CERA	50V	0.0047uF-K
C 762	1846-472-882	CERA	50V	0.0047uF-K
C 733	1846-682-882	CERA	50V	0.0068uF-K
C 734	1846-682-882	CERA	50V	0.0068uF-K
C 749	1846-682-882	CERA	50V	0.0068uF-K
C 750	1846-682-882	CERA	50V	0.0068uF-K
C 765	1846-682-882	CERA	50V	0.0068uF-K
C 766	1846-682-882	CERA	50V	0.0068uF-K
C 5	1862-010-804	ELECT	50V	1.0uF-M
C 8	1862-010-804	ELECT	50V	1.0uF-M
C 9	1862-010-804	ELECT	50V	1.0uF-M
C 19	1862-010-804	ELECT	50V	1.0uF-M
C 23	1862-010-804	ELECT	50V	1.0uF-M
C 25	1862-010-804	ELECT	50V	1.0uF-M
C 28	1862-010-804	ELECT	50V	1.0uF-M
C 29	1862-010-804	ELECT	50V	1.0uF-M
C 31	1862-010-804	ELECT	50V	1.0uF-M
C 33	1862-010-804	ELECT	50V	1.0uF-M
C 36	1862-010-804	ELECT	50V	1.0uF-M
C 39	1862-010-804	ELECT	50V	1.0uF-M
C 42	1862-010-804	ELECT	50V	1.0uF-M
C 46	1862-010-804	ELECT	50V	1.0uF-M
C 47	1862-010-804	ELECT	50V	1.0uF-M
C 51	1862-100-804	ELECT	50V	10uF-M
C 83	1862-100-804	ELECT	50V	10uF-M
C 84	1862-100-804	ELECT	50V	10uF-M
C 725	1862-100-804	ELECT	50V	10uF-M
C 726	1862-100-804	ELECT	50V	10uF-M
C 741	1862-100-804	ELECT	50V	10uF-M
C 742	1862-100-804	ELECT	50V	10uF-M
C 757	1862-100-804	ELECT	50V	10uF-M
C 758	1862-100-804	ELECT	50V	10uF-M
C 12	1861-102-218	ELECT	6.3V	1000uF-M
C 13	1862-470-604	ELECT	25V	47uF-M
C 14	1862-470-604	ELECT	25V	47uF-M
C 16	1862-470-604	ELECT	25V	47uF-M
C 17	1862-470-604	ELECT	25V	47uF-M
C 71	1862-470-503	ELECT	16V	47uF-M
C 72	1862-470-503	ELECT	16V	47uF-M
C 75	1862-470-503	ELECT	16V	47uF-M
C 76	1862-470-503	ELECT	16V	47uF-M
C 73	1862-470-604	ELECT	25V	47uF-M
C 74	1862-470-604	ELECT	25V	47uF-M
C 701	1862-4R7-800	ELECT	50V	4.7uF-M
C 702	1862-4R7-800	ELECT	50V	4.7uF-M
C 705	1862-100-800	ELECT	50V	10uF-M
C 706	1862-100-800	ELECT	50V	10uF-M
C 707	1862-4R7-804	ELECT	50V	4.7uF-M
C 708	1862-4R7-804	ELECT	50V	4.7uF-M
C 711	1862-4R7-804	ELECT	50V	4.7uF-M
C 712	1862-4R7-804	ELECT	50V	4.7uF-M

REF NO.	PART NO	DESCRIPTION		
C 713	1862-4R7-804	ELECT	50V	4.7uF-M
C 714	1862-4R7-804	ELECT	50V	4.7uF-M
C 717	1862-4R7-804	ELECT	50V	4.7uF-M
C 718	1862-4R7-804	ELECT	50V	4.7uF-M
C 719	1862-4R7-804	ELECT	50V	4.7uF-M
C 720	1862-4R7-804	ELECT	50V	4.7uF-M
C 723	1862-4R7-804	ELECT	50V	4.7uF-M
C 724	1862-4R7-804	ELECT	50V	4.7uF-M
C 50	1876-153-811	MYLAR		0.015uF-K
C 35	1879-224-750	FILM	63V	0.22uF-J

0112-011-154 DSP2 P.C.BOARD

INTEGRATED CIRCUITS

IC 723	1215-455-001	IC	NJM4558M	OP AMP
IC 724	1215-455-001	IC	NJM4558M	OP AMP
IC 725	1215-455-001	IC	NJM4558M	OP AMP
IC 726	1215-455-001	IC	NJM4558M	OP AMP

TRANSISTOR

QD 2	1243-103-004	KRC103M	NPN

DIODE

DD1	1252-000-017	1SS133, SW.

RESISTORS

RD43	1744-561-731	1/4W	560W-J

RESISTORS(CHIP)

RD 1	1746-101-771	1/10W	100W-J
RD 2	1746-101-771	1/10W	100W-J
RD 13	1746-101-771	1/10W	100W-J
RD 13	1746-101-771	1/10W	100W-J
RD 14	1746-101-771	1/10W	100W-J
RD 23	1746-101-771	1/10W	100W-J
RD 24	1746-101-771	1/10W	100W-J
RD 25	1746-101-771	1/10W	100W-J
RD 26	1746-101-771	1/10W	100W-J
RD 35	1746-101-771	1/10W	100W-J
RD 36	1746-101-771	1/10W	100W-J
R 787	1746-102-771	1/10W	1KW-J
R 788	1746-102-771	1/10W	1KW-J
R 791	1746-102-771	1/10W	1KW-J
R 792	1746-102-771	1/10W	1KW-J
R 795	1746-102-771	1/10W	1KW-J
R 796	1746-102-771	1/10W	1KW-J
RD 19	1746-103-771	1/10W	10KW-J
RD17	1746-104-771	1/10W	100KW-J
R 785	1746-104-771	1/10W	100KW-J
R 786	1746-104-771	1/10W	100KW-J
R 789	1746-104-771	1/10W	100KW-J
R 790	1746-104-771	1/10W	100KW-J
R 793	1746-104-771	1/10W	100KW-J
R 794	1746-104-771	1/10W	100KW-J
RD 7	1746-123-771	1/10W	12KW-J
RD 8	1746-123-771	1/10W	12KW-J
RD 11	1746-123-771	1/10W	12KW-J
RD 12	1746-123-771	1/10W	12KW-J
RD 20	1746-123-771	1/10W	12KW-J
RD 31	1746-123-771	1/10W	12KW-J
RD 32	1746-123-771	1/10W	12KW-J
RD 37	1746-123-771	1/10W	12KW-J
RD 38	1746-123-771	1/10W	12KW-J
RD 41	1746-123-771	1/10W	12KW-J
RD 42	1746-123-771	1/10W	12KW-J
RD 3	1746-224-771	1/10W	220KW-J
RD 4	1746-224-771	1/10W	220KW-J
RD 9	1746-224-771	1/10W	220KW-J

REF NO.	PART NO	DESCRIPTION	
RD 10	1746-224-771	1/10W	220KW-J
RD 15	1746-224-771	1/10W	220KW-J
RD 16	1746-224-771	1/10W	220KW-J
RD 21	1746-224-771	1/10W	220KW-J
RD 22	1746-224-771	1/10W	220KW-J
RD 27	1746-224-771	1/10W	220KW-J
RD 28	1746-224-771	1/10W	220KW-J
RD 33	1746-224-771	1/10W	220KW-J
RD 34	1746-224-771	1/10W	220KW-J

WAFERS

WA 716	2111-010-006	6P	53014-0610
WA 701	2111-023-005	5P	5267-05A
WA 702	2113-022-007	22P	FFC
HU 706	2114-002-113	2P	JE113-D3T-02
HU 707	2114-002-113	2P	JE113-D3T-02
WA 704	2114-012-114	12P	JE114-D1T-12
WA 705	2114-014-114	14P	JE114-D1T-14
HU 721	2121-605-010	10P	JE-605-10
HU 719	2121-605-011	11P	JE-605-11
HU 720	2121-605-011	11P	JE-605-11

WIRES

H10 <--->H11	2141-010-052	1P,1007#24220m/m
CN753	2141-020-031	2P,1533#26,180m/m
R48<->TUNER C3199BASE	2141-020-120	1P+2P,1533#26,180m/m
CN 701	2141-030-031	3P,2547#26,200m/m

MISCELLANEOUS

	5226-003-030	CASE-SHIELD(D)
IC 720	1261-171-000	TR-PHOTO;PC-17T1
IC 721	1261-171-000	TR-PHOTO;PC-17T1
X 701	1353-049-152	X-TAL;49.152MHz,SUNNY
L 707	1444-470-009	COIL ,AL02-470K,47uH(A)
JA 701	1514-001-001	JACK-RCA 1P
JA 703	1514-060-001	PIN JACK;6P,JW-4105R
JA 702	1516-000-001	OPTICAL JACK; TORX178A
JA 705	1519-650-201	REMOTE JACK;2P
L 701	1784-000-006	BEAD;6mm,AXIAL
L 702	1784-000-006	BEAD;6mm,AXIAL
L 704	1784-000-006	BEAD;6mm,AXIAL
L 705	1784-000-006	BEAD;6mm,AXIAL
L 706	1784-000-006	BEAD;6mm,AXIAL
L 709	1784-000-006	BEAD;6mm,AXIAL
L 711	1784-000-006	BEAD;6mm,AXIAL
L 710	1742-000-0003	WIRE P=10mm, SND=0.6mm
JA 706	1514-010-002	MULTI-ROOM JACK ;1P
JA 704	1514-020-004	PIN JACK;2P,JK0200440N
HU 709	2114-604-004	WAFER; 4P,PLUG

CAPACITIORS

C 755	1846-334-883	CERA(CHIP)	50V	0.33uF-K
C 739	1846-682-882	CERA(CHIP)	50V	0.0068uF-K
C 740	1846-682-882	CERA(CHIP)	50V	0.0068uF-K
C 756	1846-682-882	CERA(CHIP)	50V	0.0068uF-K
C 771	1846-682-882	CERA(CHIP)	50V	0.0068uF-K
C 772	1846-682-882	CERA(CHIP)	50V	0.0068uF-K
CD 15	1862-010-804	ELECT	50V	1.0uF-M
CD 9	1862-100-504	ELECT	16V	10uF-M
CD 19	1862-100-504	ELECT	16V	10uF-M
C 737	1862-100-804	ELECT	50V	10uF-M
C 738	1862-100-804	ELECT	50V	10uF-M
C 753	1862-100-804	ELECT	50V	10uF-M
C 754	1862-100-804	ELECT	50V	10uF-M
C 769	1862-100-804	ELECT	50V	10uF-M
C 770	1862-100-804	ELECT	50V	10uF-M
CD 1	1862-4R7-804	ELECT	50V	4.7uF-M
CD 2	1862-4R7-804	ELECT	50V	4.7uF-M
CD 5	1862-4R7-804	ELECT	50V	4.7uF-M

REF NO.	PART NO	DESCRIPTION			
CD 6	1862-4R7-804	ELECT	50V	4.7uF-M	
CD 7	1862-4R7-804	ELECT	50V	4.7uF-M	
CD 8	1862-4R7-804	ELECT	50V	4.7uF-M	
CD 11	1862-4R7-804	ELECT	50V	4.7uF-M	
CD 12	1862-4R7-804	ELECT	50V	4.7uF-M	
CD 13	1862-4R7-804	ELECT	50V	4.7uF-M	
CD 14	1862-4R7-804	ELECT	50V	4.7uF-M	
CD 17	1862-4R7-804	ELECT	50V	4.7uF-M	
CD 18	1862-4R7-804	ELECT	50V	4.7uF-M	
CD 3	1862-4R7-804	ELECT	50V	4.7uF-M	
CD 4	1862-4R7-804	ELECT	50V	4.7uF-M	
CD 10	1862-4R7-804	ELECT	50V	4.7uF-M	
WAFERS					
HU 704	2121-012-602	12P		JE602-A1G-12	
HU 705	2121-014-602	14P		JE602-A1G-14	
MISCELLANEOUS					
R47<------>H13	2141-010-024	WIRE;1P,1007#24,150m/m			
RL1	2022-000-012	RELAY;CP-12			
0112-011-151 C-VIDEO P.C.BOARD					
INTEGRATED CIRCUITS					
IC 351	1212-795-001	IC,LA7951 VIDEO SW,6dB			
IC 355	1212-106-001	IC;MM1067XD,SYNC SEPARATE SYNC			
IC 353	1215-762-001	IC;BA7622/F,75ohm DRIVER			
IC 354	1215-900-001	IC;MB90089,OSD,FUJITSU			
IC 352	1211-226-001	IC-DIP;NJM2267D,VIDEO,JRC			
TRANSISTORS					
Q 351	1243-319-001	TR,KTC3198-GR			NPN
Q 357	1243-319-001	TR,KTC3198-GR			NPN
Q 358	1243-319-001	TR,KTC3198-GR			NPN
Q 353	1243-103-004	TR; KRC103M			NPN
Q 359	1243-103-004	TR; KRC103M			NPN
Q 352	1243-103-003	TR;KTD1302			NPN
Q 261	1243-103-003	TR;KTD1302			NPN
Q 362	1243-103-003	TR;KTD1302			NPN
Q 360	1244-103-004	TR;KRA103M			PNP
RESISTORS					
R 357	1742-122-721	1/8W		1.2KW-J	
R 356	1742-151-721	1/8W		150W-J	
R 368	1742-151-721	1/8W		150W-J	
R 354	1742-680-721	1/8W		68W-J	
R 355	1742-680-721	1/8W		68W-J	
R 351	1742-750-721	1/8W		75W-J	
R 352	1742-750-721	1/8W		75W-J	
R 353	1742-750-721	1/8W		75W-J	
R 358	1742-750-721	1/8W		75W-J	
R 359	1742-750-721	1/8W		75W-J	
R 367	1742-100-721	1/8W		10W-J	
R 373	1742-103-721	1/8W		10KW-J	
R 374	1742-103-721	1/8W		10KW-J	
R 375	1742-103-721	1/8W		10KW-J	
R 378	1742-103-721	1/8W		10KW-J	
R 364	1742-103-721	1/8W		10KW-J	
R 366	1742-103-721	1/8W		10KW-J	
R 376	1742-104-721	1/8W		100KW-J	
R 360	1742-222-721	1/8W		2.2KW-J	
R 380	1742-222-721	1/8W		2.2KW-J	
R 396	1742-222-721	1/8W		2.2KW-J	
R 397	1742-222-721	1/8W		2.2KW-J	
R 379	1742-272-721	1/8W		2.7KW-J	
R 371	1742-391-721	1/8W		390W-J	
R 381	1742-391-721	1/8W		390W-J	
R 381	1742-221-721	1/8W		220W-J	**BK**

REF NO.	PART NO	DESCRIPTION			
R 361	1742-102-721	1/8W		1KW-J	**IB/AB**
R 362	1742-102-721	1/8W		1KW-J	
R 363	1742-102-721	1/8W		1KW-J	
R 365	1742-330-721	1/8W		33W-J	
R 369	1742-330-721	1/8W		33W-J	
R 377	1742-562-721	1/8W		5.6KW-J	
R 372	1742-823-721	1/8W		82KW-J	
CAPACITORS					
C 351	1822-101-772	CERA/RA	50V	100pF-J	
C 353	1822-101-772	CERA/RA	50V	100pF-J	
C 355	1822-101-772	CERA/RA	50V	100pF-J	
C 357	1822-101-772	CERA/RA	50V	100pF-J	
C 358	1822-101-772	CERA/RA	50V	100pF-J	
C 361	1862-100-504	CERA/RA	50V	100pF-J	
C 360	1862-331-318	ELECT	16V	10uF-M	
C 363	1862-470-604	ELECT	10V	33uF-M	
C 367	1862-470-604	ELECT	25V	47uF-M	
C 369	1862-470-604	ELECT	25V	47uF-M	
C 352	1862-4R7-804	ELECT	25V	47uF-M	
C 354	1862-4R7-804	ELECT	50V	4.7uF-M	
C 356	1862-4R7-804	ELECT	50V	4.7uF-M	
C 362	1832-104-002	ELECT	50V	4.7uF-M	
C 364	1832-104-002	CERA/AX	50V	0.1uF-Z	
C 365	1832-104-002	CERA/AX	50V	0.1uF-Z	
C 366	1832-104-002	CERA/AX	50V	0.1uF-Z	
C 368	1832-104-002	CERA/AX	50V	0.1uF-Z	
C 384	1832-104-002	CERA/AX	50V	0.1uF-Z	
C 379	1822-030-212	CERA/AX	50V	0.1uF-Z	
C 380	1822-030-212	CERA/AX	50V	30pF-J	
C 373	1822-222-882	CERA/AX	50V	30pF-J	
C 381	1822-270-712	CERA/AX	50V	0.0022uF-J	
C 378	1832-103-772	CERA/AX	50V	27pF-J	
C 393	1832-103-772	CERA/AX	50V	0.01uF-J	
C 388	1832-221-822	CERA/AX	50V	0.01uF-J	
C 387	1832-332-772	CERA/AX	50V	220pF-K	**BK**
C 387	1832-472-772	CERA/AX	50V	0.0033uF-J	**IB/AB**
C 391	1832-471-712	CERA/AX	50V	0.0047uF-J	
C 385	1832-473-002	CERA/AX	50V	470pF-J	
C 377	1862-010-804	CERA/AX	50V	0.047uF-Z	
C 386	1862-010-804	ELEC	50V	1.0uF-M	
C 389	1862-010-804	ELEC	50V	1.0uF-M	
C 383	1862-100-804	ELEC	50V	10uF-M	
C 392	1862-R47-804	ELEC	50V	0.47uF-M	
C 372	1862-R22-804	ELEC	50V	0.22uF-M	
C 371	1862-2R2-804	ELEC	50V	2.2uF-M	
C 374	1861-102-218	ELEC	6.3V	1000uF-M	
C 370	1861-102-218	ELEC	6.3V	1000uF-M	
C 359	1861-102-218	ELEC	6.3V	1000uF-M	
C 379	1822-150-712	CERA/RA	50V	15pF-J	
C 380	1822-150-712	CERA/RA	50V	15pF-J	
C 382	1822-240-712	CERA/RA	50V	24pF-J	
MISCELLANEOUS					
HU 351	2121-605-008	WAFER 8P, JE-605-08			
L 351	1444-270-003	INDUCTOR/AX; 27uH(A)			
L 352	1444-270-003	INDUCTOR/AX; 27uH(A)			
L 353	1444-270-003	INDUCTOR/AX; 27uH(A)			
JP 352	1514-030-002	PIN JACK;3P			
JP 351	1514-020-002	PIN JACK;2P			
WA 352	2111-023-006	WAFER;5267-06A,6P			
CN 353	2141-070-017	WIRE;7P,1007#26,80m/m			
XT 352	1341-500-040	FILTER;CSB500F40			**IB/AB**
XT 352	1341-503-001	FILTER;CSB503F2			**BK**
XT 351	1352-14R-001	X-TAL;14.31818MHZ			**BK**
XT 351	1352-17R-001	X-TAL;17.734475MHZ			**IB/AB**
0112-011-1632 TUNER P.C.BOARD					

REF NO.	PART NO	DESCRIPTION			
INTEGRATED CIRCUITS					
IC 801	1212-126-002	IC	LA1266	AM/FM IF	
IC 803	1212-341-001	IC	LA3410	FM MPX	
IC 802	1212-700-002	IC	LM7000	PLL	
IC 804	1212-923-000	IC	BU1923	RDS	**IB**
TRANSISTORS					
Q 809	1243-110-005	KRC110M		NPN	
Q 810	1243-110-005	KRC110M		NPN	
Q 801	1243-319-008	KTC3192-O		NPN	
Q 802	1243-319-008	KTC3192-O		NPN	
Q 803	1243-319-008	KTC3192-O		NPN	
Q 891	1243-319-008	KTC3192-O		NPN	**IB/AB**
Q 805	1243-320-001	KTC3200-GR		NPN	
Q 899	1243-319-007	KTC-3199GR		NPN	
Q 806	1244-101-010	KRA101M		PNP	
Q 807	1244-101-010	KRA101M		PNP	
Q 808	1244-101-010	KRA101M		PNP	
FET					
Q 804	1248-246-001	FET,2SK246-Y		N-CH	
DIODES					
D 801	1252-000-017	1SS133			
D 802	1252-000-017	1SS133			
D 803	1252-000-017	1SS133			
D 804	1252-000-017	1SS133			
VC 801	1252-000-040	VVC;AM,SVC321SPA-D2			
VC 802	1252-000-040	VVC;AM,SVC321SPA-D2			
ZD 803	1254-5R6-009	ZENER	5.6V		
ZD 804	1254-4R7-025	ZENER	4.7V		
ZD 802	1254-5R1-021	ZENER	5.1V		**IB**
FILTERS					
F 805	1321-001-002	AHCFM2-450BL			
F 801	1321-000-005	SFE10.7MA5-A(RED)			**BK**
F 802	1321-000-005	SFE10.7MA5-A(RED)			**BK**
F 801	1321-000-013	SFE10.7MS3-A			**IB/AB**
F 802	1321-000-013	SFE10.7MS3-A			**IB/AB**
F 803	1321-000-005	SFE10.7MA5-A(RED)			
F 806	1341-000-015	CSB456F11			
F 804	1341-000-061	BFU450C4N			
COILS					
T 804	1422-000-051	FM DET1			
T 805	1422-000-052	FM DET2			
T 803	1422-000-055	AM IFT			
T 802	1432-000-053	AM OSC			
T 801	1432-000-054	AM ANT			
T 806	1432-001-001	MPX			
T 807	1432-001-001	MPX			
RESISTORS(CARBON)					
R 801	1742-101-721	1/8W		100W-J	
R 844	1742-101-721	1/8W		100W-J	
R 845	1742-101-721	1/8W		100W-J	
R 819	1742-102-721	1/8W		1KW-J	
R 824	1742-102-721	1/8W		1KW-J	
R 828	1742-102-721	1/8W		1KW-J	
R 831	1742-102-721	1/8W		1KW-J	
R 837	1742-102-721	1/8W		1KW-J	
R 892	1742-102-721	1/8W		1KW-J	**IB**
R 817	1742-103-721	1/8W		10KW-J	
R 848	1742-103-721	1/8W		10KW-J	
R 849	1742-103-721	1/8W		10KW-J	
R 852	1742-103-721	1/8W		10KW-J	
R 858	1742-103-721	1/8W		10KW-J	
R 860	1742-103-721	1/8W		10KW-J	
R 861	1742-103-721	1/8W		10KW-J	
R 862	1742-103-721	1/8W		10KW-J	
R 893	1742-103-721	1/8W		10KW-J	**IB**
R 814	1742-104-721	1/8W		100KW-J	
R 815	1742-104-721	1/8W		100KW-J	
R 827	1742-104-721	1/8W		100KW-J	
R 881	1742-104-721	1/8W		100KW-J	
R 805	1742-121-721	1/8W		120W-J	
R 802	1742-122-721	1/8W		1.2KW-J	
R 830	1742-153-721	1/8W		15KW-J	**BK**
R 838	1742-154-721	1/8W		150KW-J	
R 839	1742-154-721	1/8W		150KW-J	
R 840	1742-154-721	1/8W		150KW-J	
R 841	1742-154-721	1/8W		150KW-J	
R 812	1742-221-721	1/8W		220W-J	
R 816	1742-221-721	1/8W		220W-J	
R 864	1742-221-721	1/8W		220W-J	
R 803	1742-222-721	1/8W		2.2KW-J	
R 826	1742-223-721	1/8W		22KW-J	
R 820	1742-271-721	1/8W		270W-J	
R 830	1742-273-721	1/8W		27KW-J	
R 804	1742-331-721	1/8W		330W-J	
R 809	1742-331-721	1/8W		330W-J	**IB/BK**
R818	1742-331-721	1/8W		330W-J	
R 871	1742-331-721	1/8W		330W-J	
R 808	1742-332-721	1/8W		3.3KW-J	
R 822	1742-332-721	1/8W		3.3KW-J	
R 835	1742-332-721	1/8W		3.3KW-J	
R 846	1742-332-721	1/8W		3.3KW-J	
R 847	1742-332-721	1/8W		3.3KW-J	
R 807	1742-391-721	1/8W		390W-J	
R 806	1742-392-721	1/8W		3.9KW-J	
R 857	1742-393-721	1/8W		39KW-J	
R 899	1742-472-721	1/8W		4.7KW-J	
R 856	1742-560-721	1/8W		56W-J	
R 859	1742-561-721	1/8W		560W-J	
R 863	1742-561-721	1/8W		560W-J	
R 825	1742-562-721	1/8W		5.6KW-J	
R 834	1742-562-721	1/8W		5.6KW-J	**IB**
R 810	1742-681-721	1/8W		680W-J	**IB**
R 829	1742-683-721	1/8W		68KW-J	
R 882	1742-683-721	1/8W		68KW-J	
R 811	1742-821-721	1/8W		820W-J	
R 842	1742-272-721	1/8W		2.7KW-J	
R 843	1742-272-721	1/8W		2.7KW-J	
R 888	1744-100-731	1/4W		10W-J	
R 813	1744-101-731	1/4W		100W-J	
R 823	1744-101-731	1/4W		100W-J	
R 832	1744-220-731	1/4W		22W-J	
R 865	1744-220-731	1/4W		22W-J	**IB**
R 891	1744-220-731	1/4W		22W-J	
R 851	1744-221-731	1/4W		220W-J	
R 836	1744-470-731	1/4W		47W-J	
R 866	1744-331-731	1/4W		330W-J	
R 855	1744-331-731	1/4W		330W-J	**IB**
MISCELLANEOUS					
	5226-003-040	CASE-SHIELD(T2)			
ANT 801	1514-021-393	TERMINAL-JACK		M 75ohm	
ANT 801	1514-021-392	TERMINAL-JACK		M 75ohm	**IB/AB**
P 801	1291-000-006	TUNER PACK		FTA4-460H	
X 801	1352-000-072	X-TAL		7.2MHz	
X 802	1352-432-001	X-TAL		4.332MHz	**IB**
L 803	1444-270-003	COIL		L02-270K,27uH(A)	
L 804	1444-270-003	COIL		L02-270K,27uH(A)	
L 802	1471-200-005	COIL		20.8mH	**IB**
VR 803	1731-224-002	VR-SEMI		220kohm	
VR 801	1731-473-004	VR-SEMI		47kohm	
VR 802	1731-473-004	VR-SEMI		47kohm	

REF NO.	PART NO	DESCRIPTION			
CT 801	1815-020-001	C-TRIM		20pF	

CAPACITORS

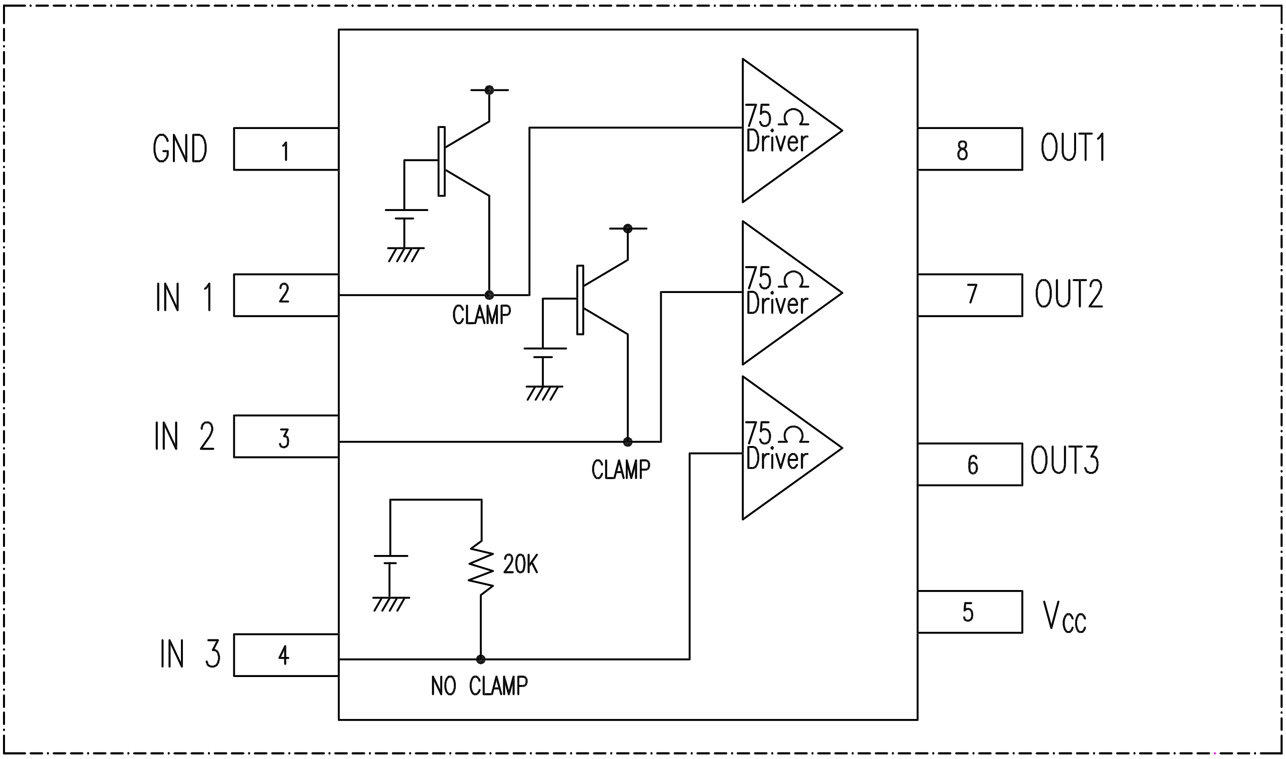
REF NO.	PART NO	DESCRIPTION			
C 855	1822-150-712	CERA/RA	50V	15pF-J	IB
C 844	1822-300-712	CERA/RA	50V	30pF-J	IB
C 845	1822-300-712	CERA/RA	50V	30pF-J	
C 814	1822-330-712	CERA/RA	50V	33pF-J	
C 815	1822-330-712	CERA/RA	50V	33pF-J	AB/IB
C 891	1822-331-712	CERA/RA	50V	33pF-J	AB/IB
C 838	1822-331-712	CERA/RA	50V	33pF-J	AB/IB
C 839	1822-331-712	CERA/RA	50V	33pF-J	AB/IB
C 892	1822-820-772	CERA/RA	50V	82pF-J	AB/IB
C 893	1822-101-772	CERA/RA	50V	100pF-J	
C 801	1822-223-001	CERA/RA	50V	0.022uF-Z	
C 802	1822-223-001	CERA/RA	50V	0.022uF-Z	
C 803	1822-223-001	CERA/RA	50V	0.022uF-Z	
C 809	1822-223-001	CERA/RA	50V	0.022uF-Z	
C 813	1822-223-001	CERA/RA	50V	0.022uF-Z	
C 824	1822-223-001	CERA/RA	50V	0.022uF-Z	
C 828	1822-223-001	CERA/RA	50V	0.022uF-Z	
C 830	1822-223-001	CERA/RA	50V	0.022uF-Z	
C 850	1822-223-001	CERA/RA	50V	0.022uF-Z	
C 857	1822-223-001	CERA/RA	50V	0.022uF-Z	
C 894	1822-223-001	CERA/RA	50V	0.022uF-Z	AB/IB
C 846	1822-223-001	CERA/RA	50V	0.022uF-Z	IB
C 838	1822-471-822	CERA/RA	50V	470pF-K	BK
C 839	1822-471-822	CERA/RA	50V	470pF-K	BK
C 848	1822-561-712	CERA/RA	50V	560pF-J	IB
C 804	1822-473-001	CERA/RA	50V	0.047uF-Z	
C 822	1822-473-001	CERA/RA	50V	0.047uF-Z	
C 826	1822-473-001	CERA/RA	50V	0.047uF-Z	
C 827	1822-473-001	CERA/RA	50V	0.047uF-Z	
C 816	1832-101-712	CERA/AX	50V	100pF-J	
C 817	1832-101-712	CERA/AX	50V	100pF-J	
C 843	1832-331-822	CERA/AX	50V	330pF-K	IB
C 818	1832-223-001	CERAA/AX	50V	0.022uF-Z	
C 810	1862-010-804	ELECT	50V	1.0uF-M	
C 808	1862-100-504	ELECT	16V	10uF-M	
C 835	1862-100-504	ELECT	16V	10uF-M	
C 851	1862-100-504	ELECT	16V	10uF-M	
C 866	1862-100-504	ELECT	16V	10uF-M	
C 837	1862-100-504	ELECT	16V	10uF-M	
C 840	1862-100-504	ELECT	16V	10uF-M	
C 831	1862-101-517	ELECT	16V	100uF-M	
C 859	1862-101-517	ELECT	16V	100uF-M	
C 833	1862-2R2-804	ELECT	50V	2.2uF-M	
C 849	1862-2R2-804	ELECT	50V	2.2uF-M	IB
C 820	1862-3R3-804	ELECT	50V	3.3uF-M	
C 832	1862-3R3-804	ELECT	50V	3.3uF-M	
C 867	1862-3R3-804	ELECT	50V	3.3uF-M	
C 812	1862-470-404	ELECT	16V	47uF-M	
C 829	1862-470-404	ELECT	16V	47uF-M	
C 847	1862-470-404	ELECT	16V	47uF-M	IB
C 856	1862-470-404	ELECT	16V	47uF-M	
C 821	1862-4R7-804	ELECT	50V	4.7uF-M	
C 825	1862-R47-804	ELECT	50V	0.47uF-M	
C 836	1862-R47-804	ELECT	50V	0.47uF-M	
C 806	1872-471-731	STYROL	50V	470pF-J	
C 811	1876-102-811	POLYESTER	100V	0.001uF-K	
C 834	1876-473-811	POLYESTER	100V	0.047uF-K	
C 819	1876-124-811	POLYESTER	100V	0.12uF-K	

WAFERS

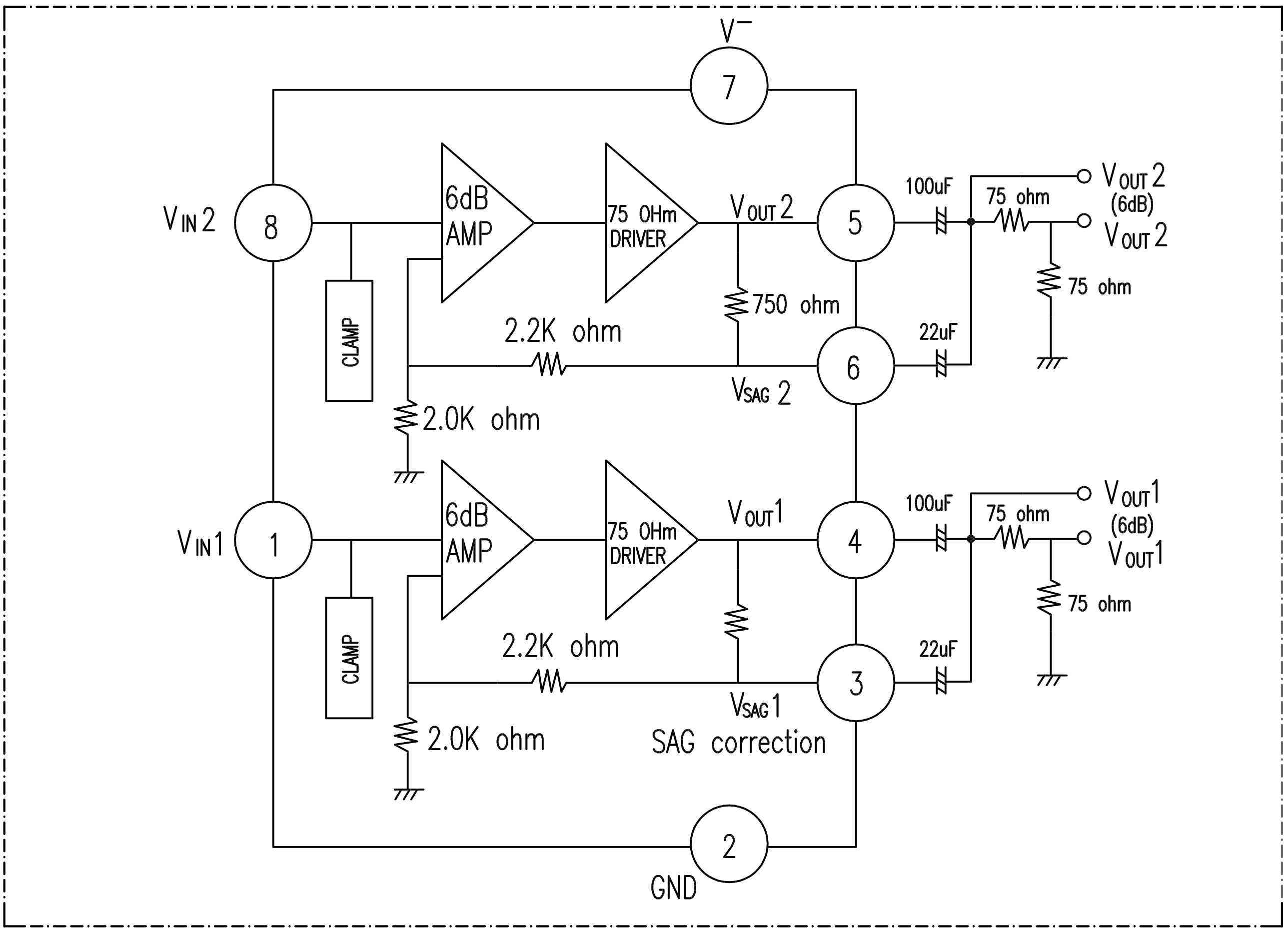
REF NO.	PART NO	DESCRIPTION	
WA 809	2111-023-004	4P	5267-04A
WA 807	2111-023-008	8P	5267-08A
WA 808	2111-023-009	9P	5267-09A
WA 802	2121-605-006	6P	JE-605-06
WA 801	2121-605-010	10P	JE-605-10
WA 899	2111-023-002	2P	5267-02A

IC BLOCK DIAGRAMS

IC 352 : NJM 2267
VIDEO SWITCHING

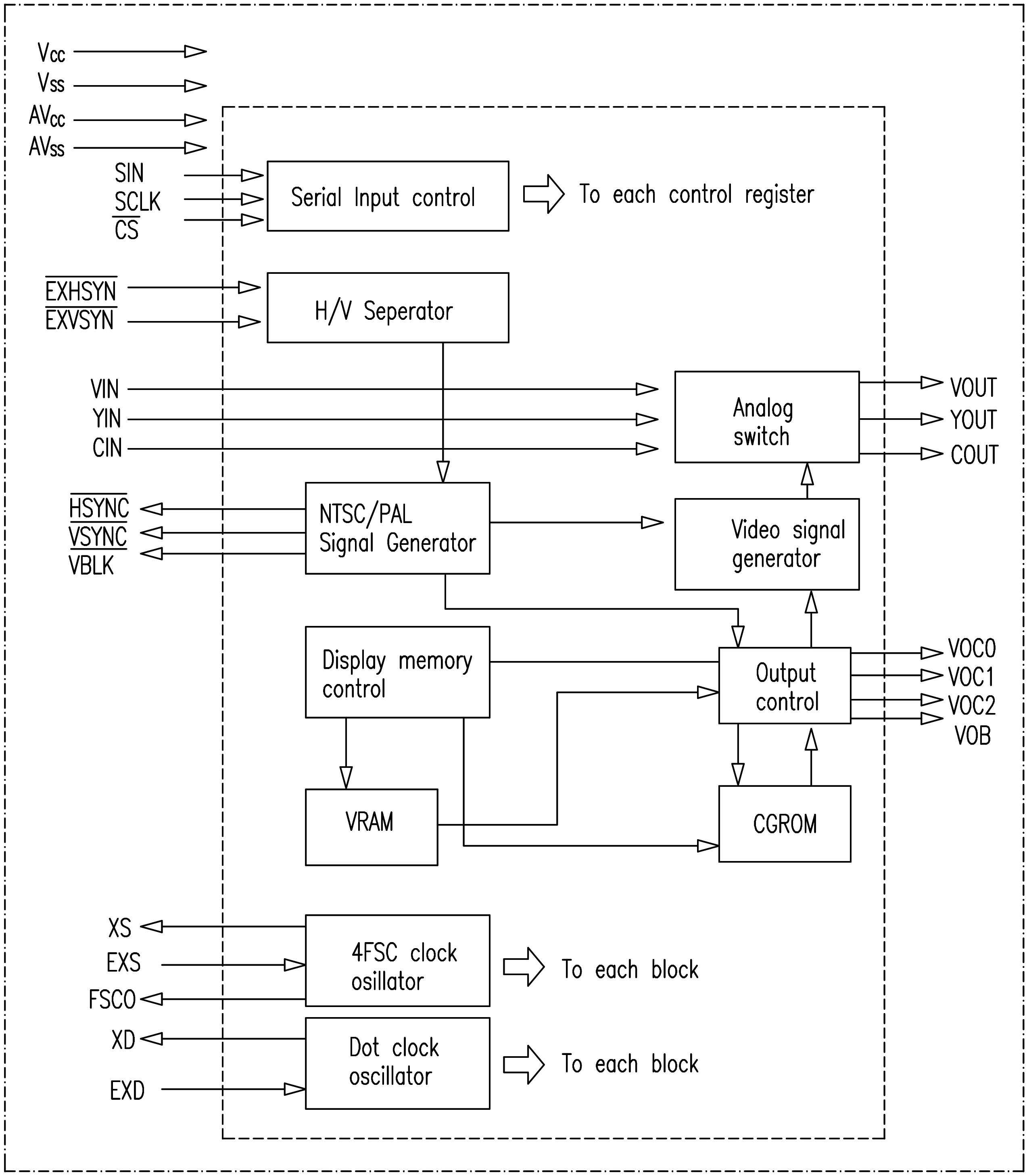


IC 353 : BA7622F
VIDEO 6dB AMPLIFIER



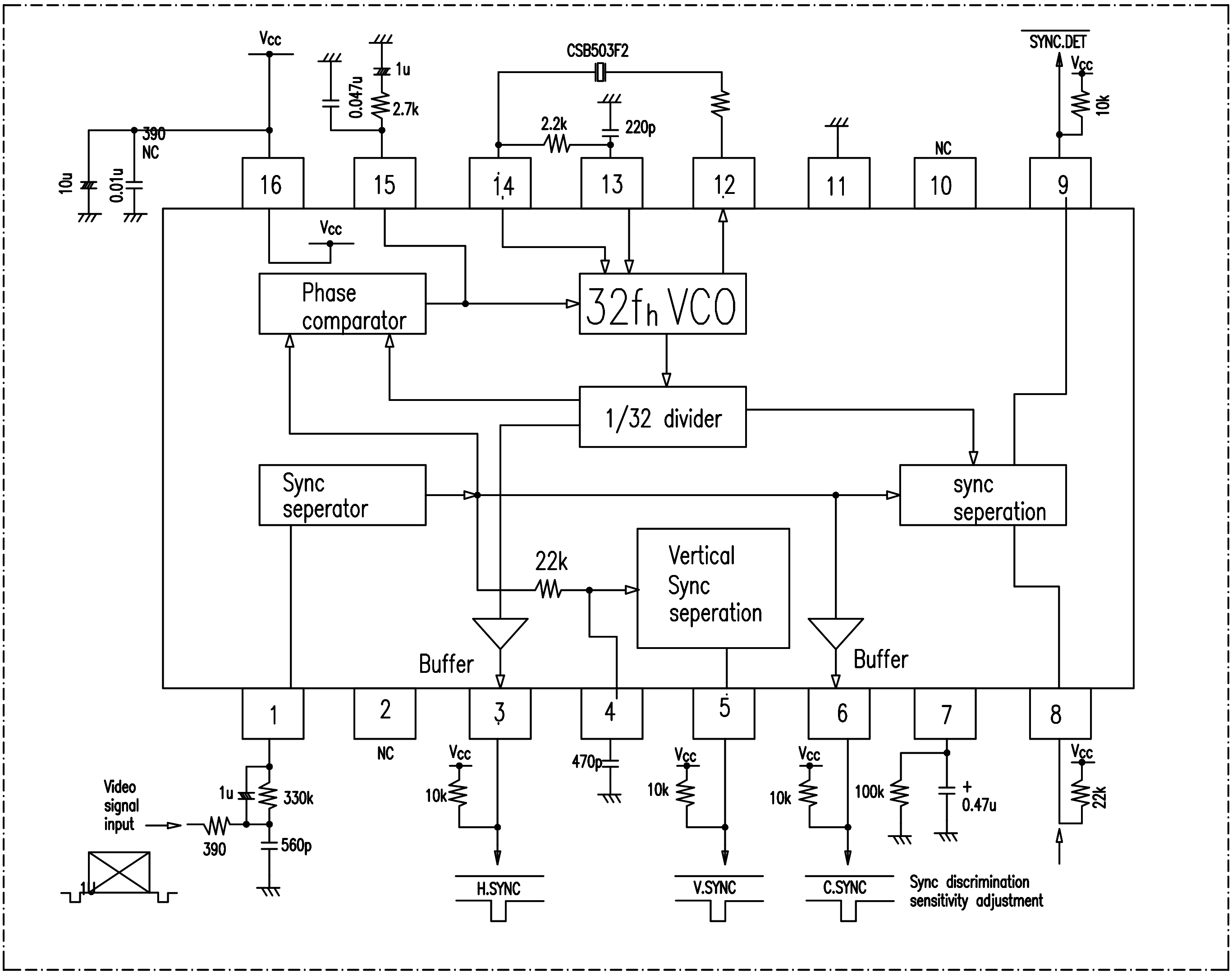
IC354 : MB90089

ON-SCREEN DISPLAY



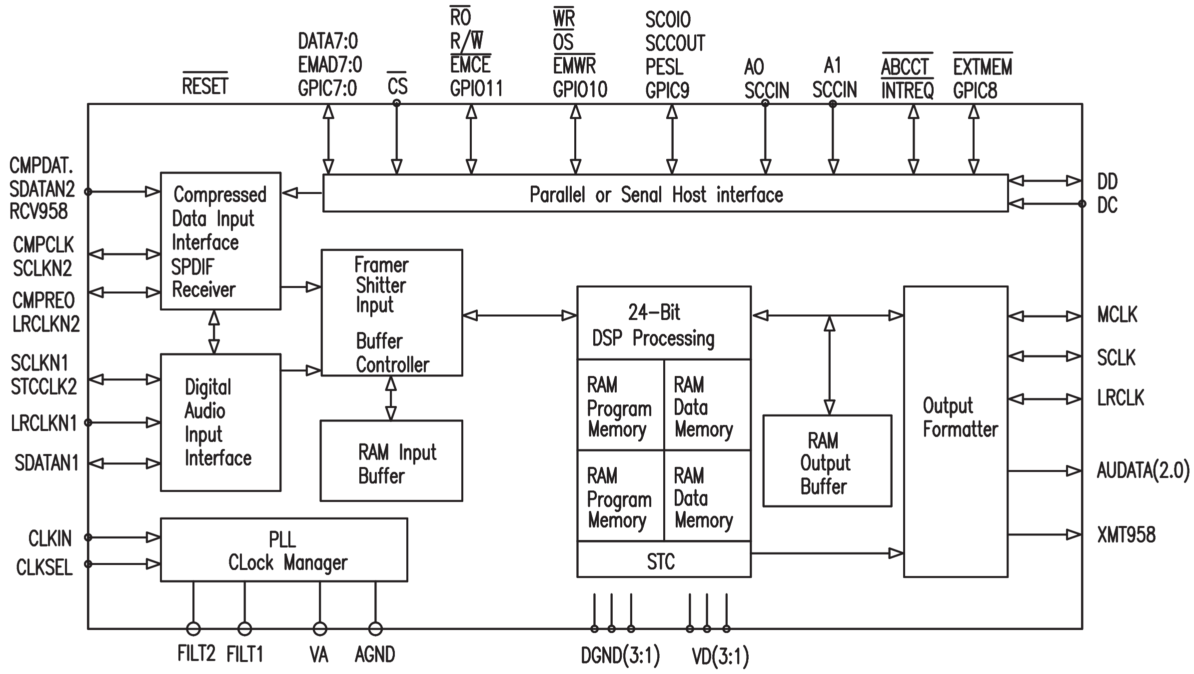
IC 355 : MM1067

NO-ADJUSTMENT SYNC SEPERATOR & SYNC DETECTOR



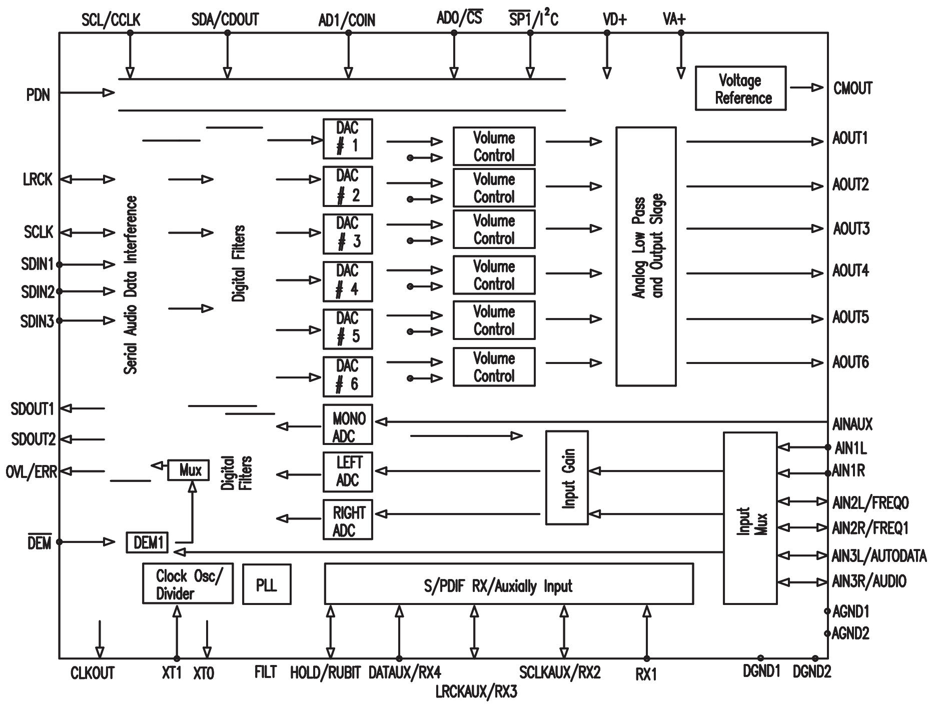
IC710 : CS4923 CS4926

AC-3 DECODER

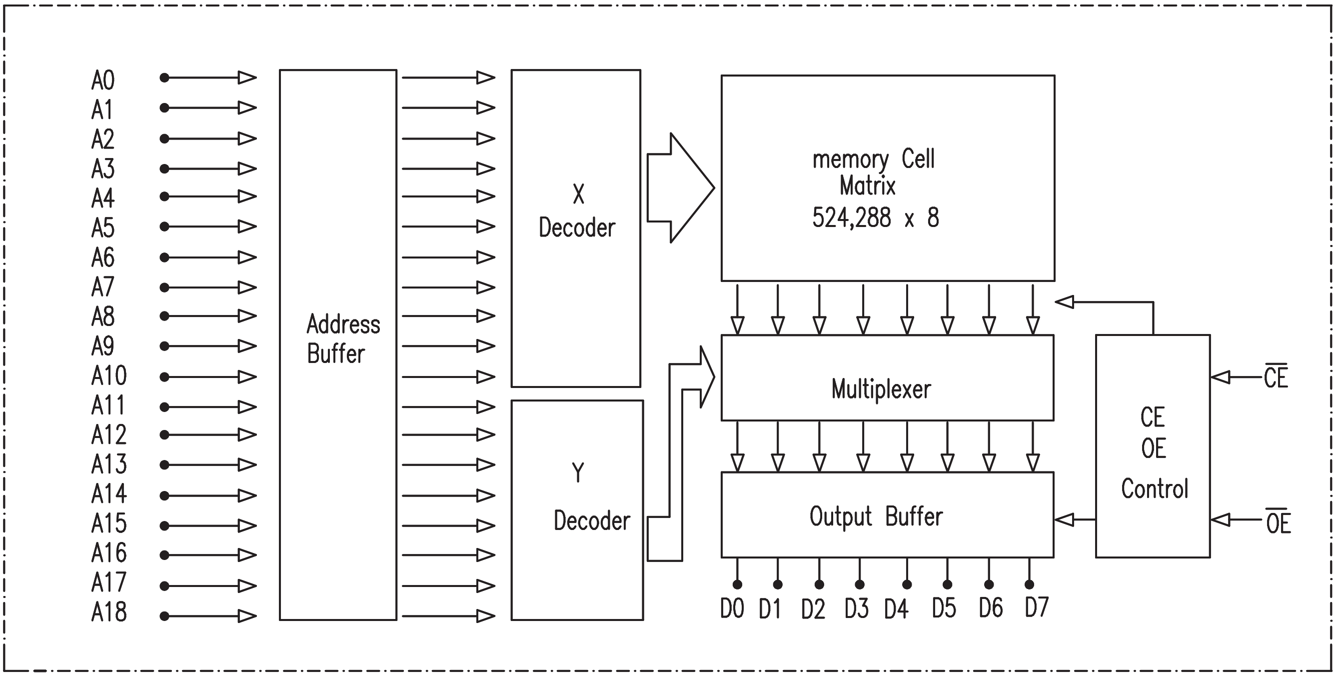


IC709 : CS4226

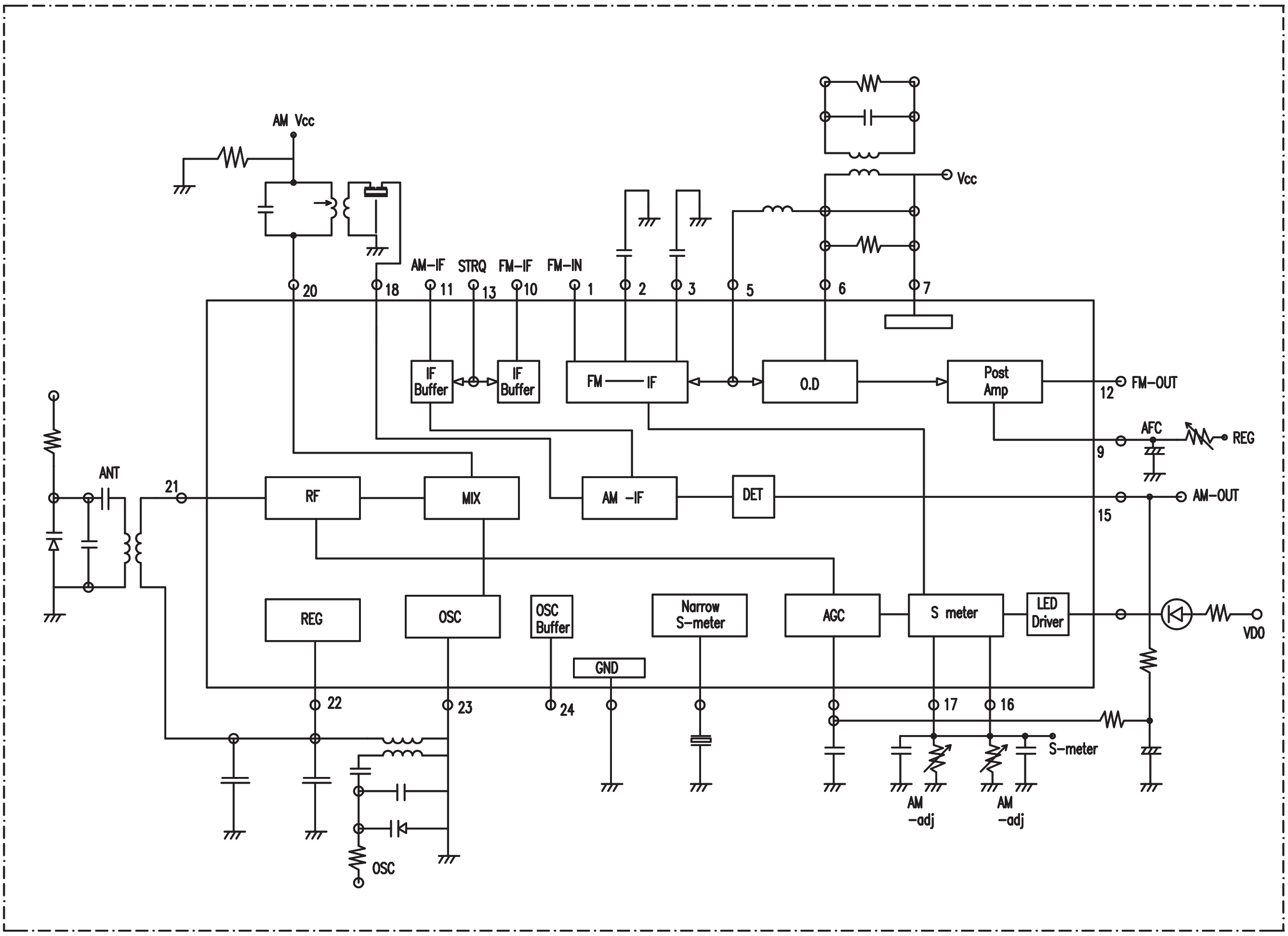
SURROUND SOUND CODEC



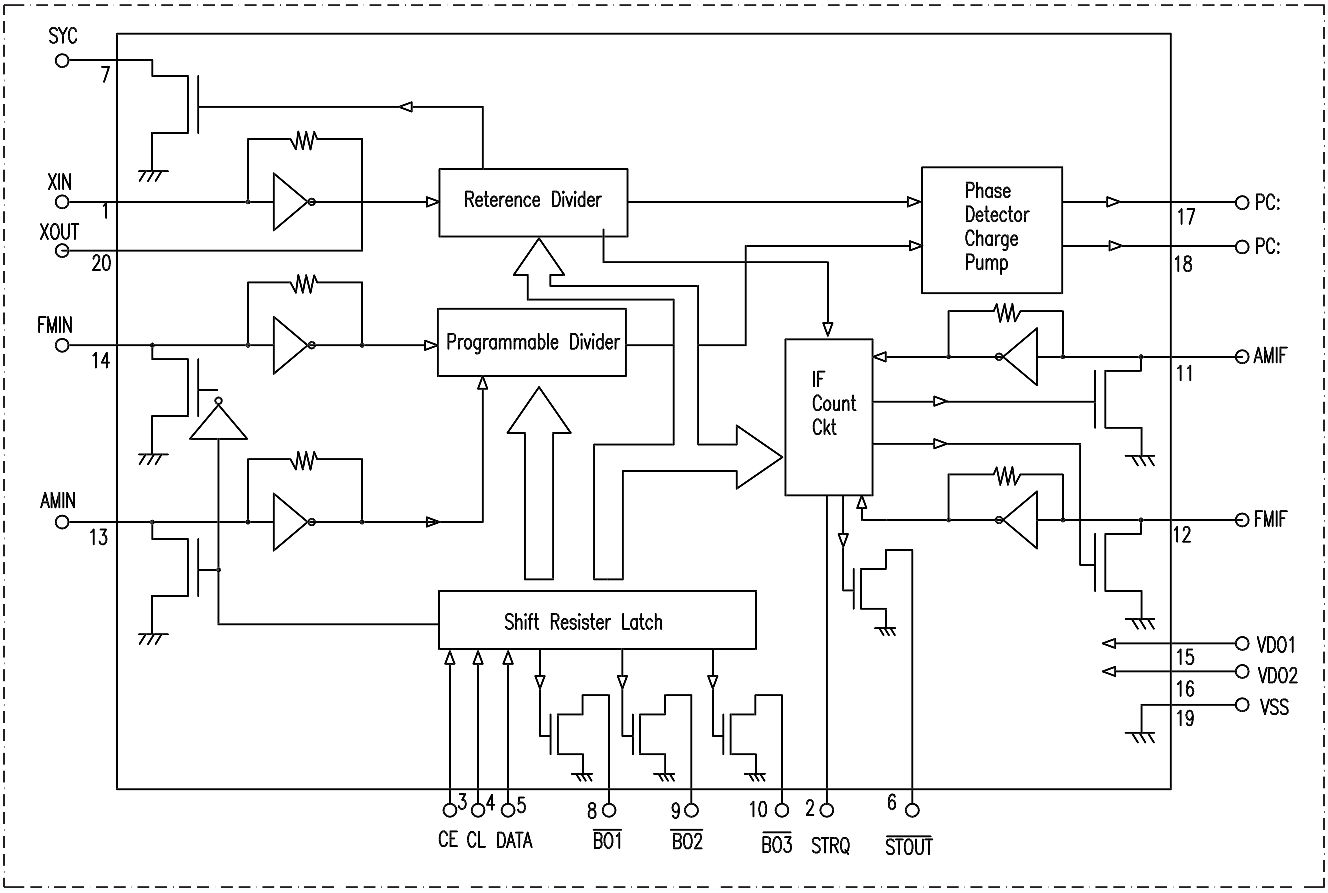
IC713 : MSM534031C
ROM IC



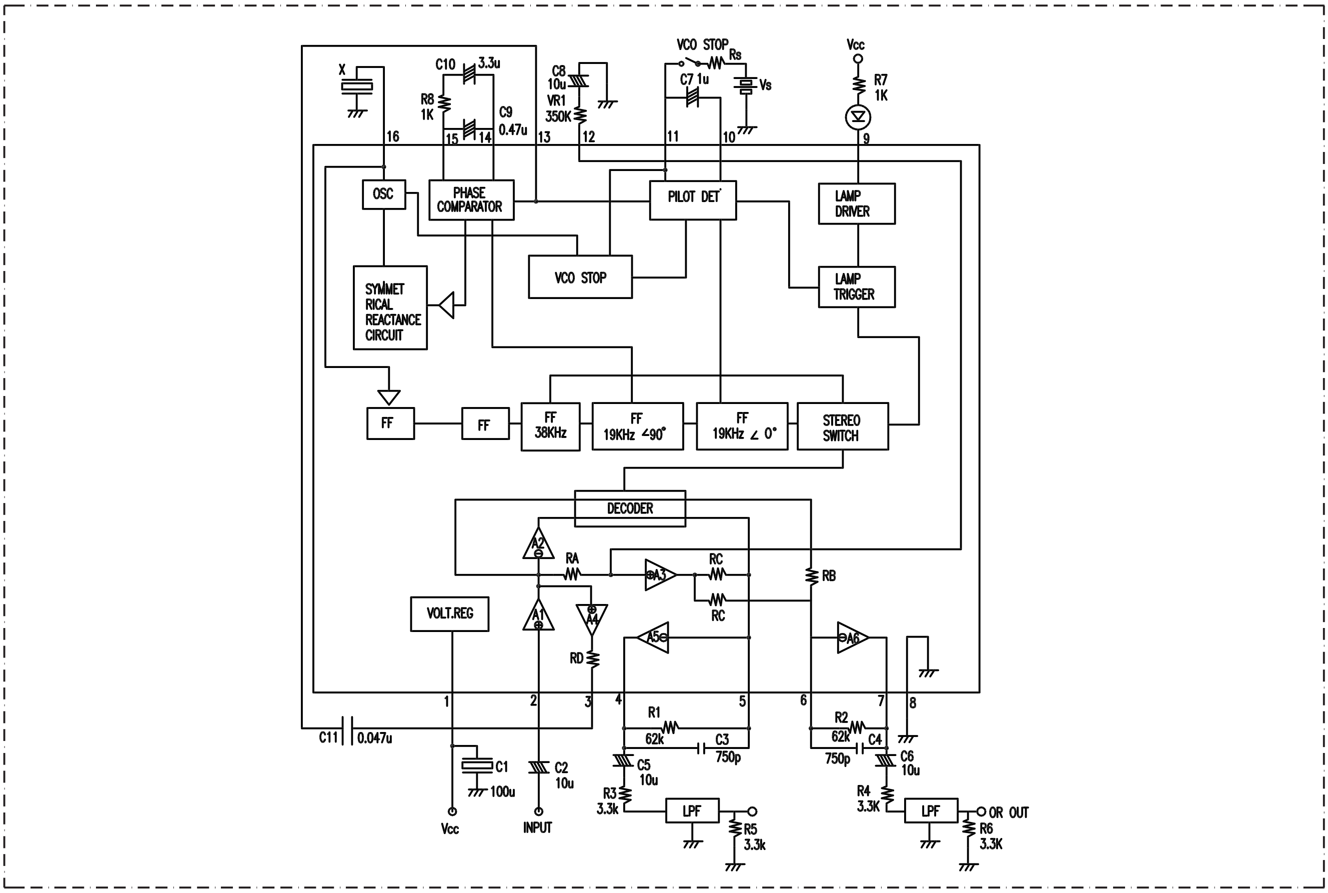
IC801 : LA1266
FM/AM IF



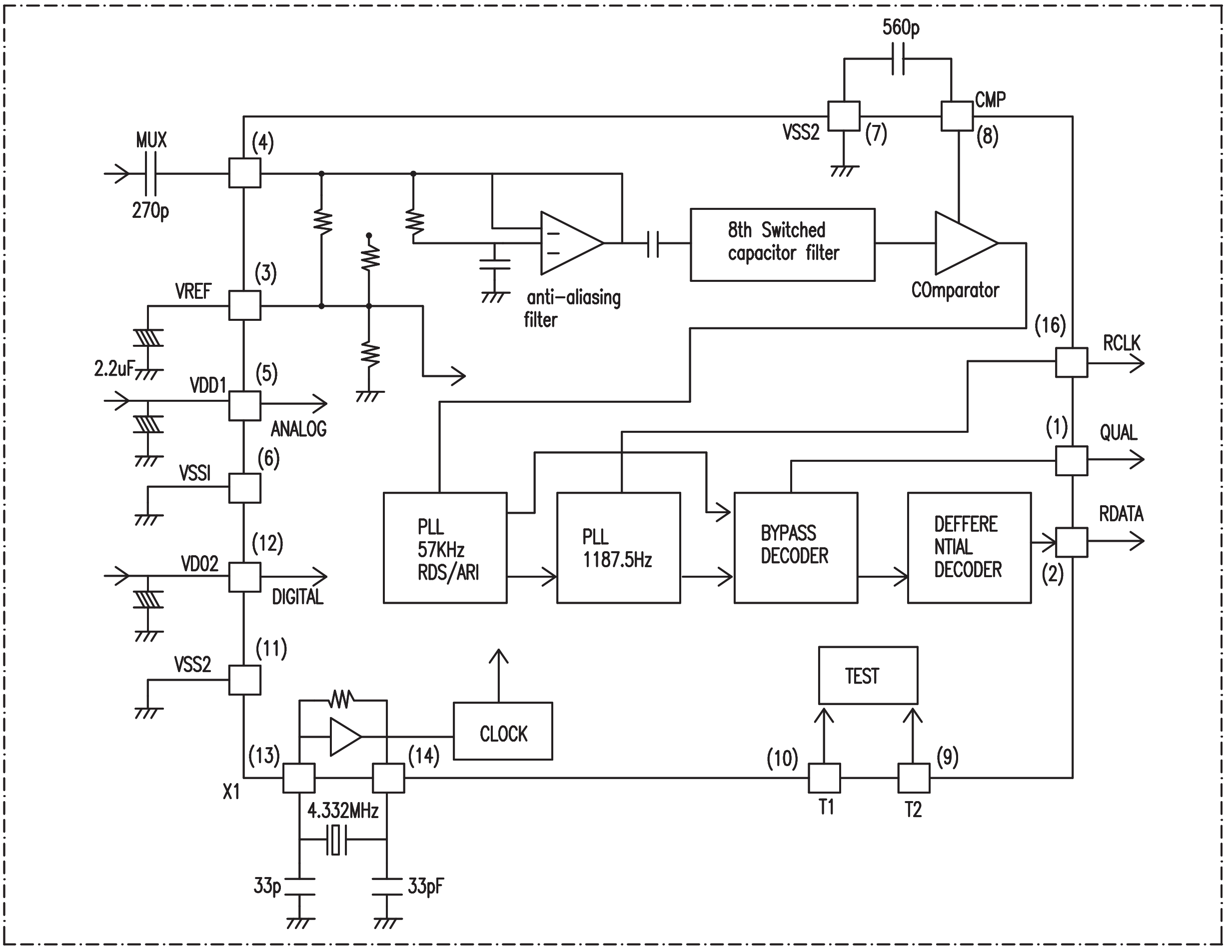
IC804 : LM7000
PLL FREQ. SYNTHESIZER



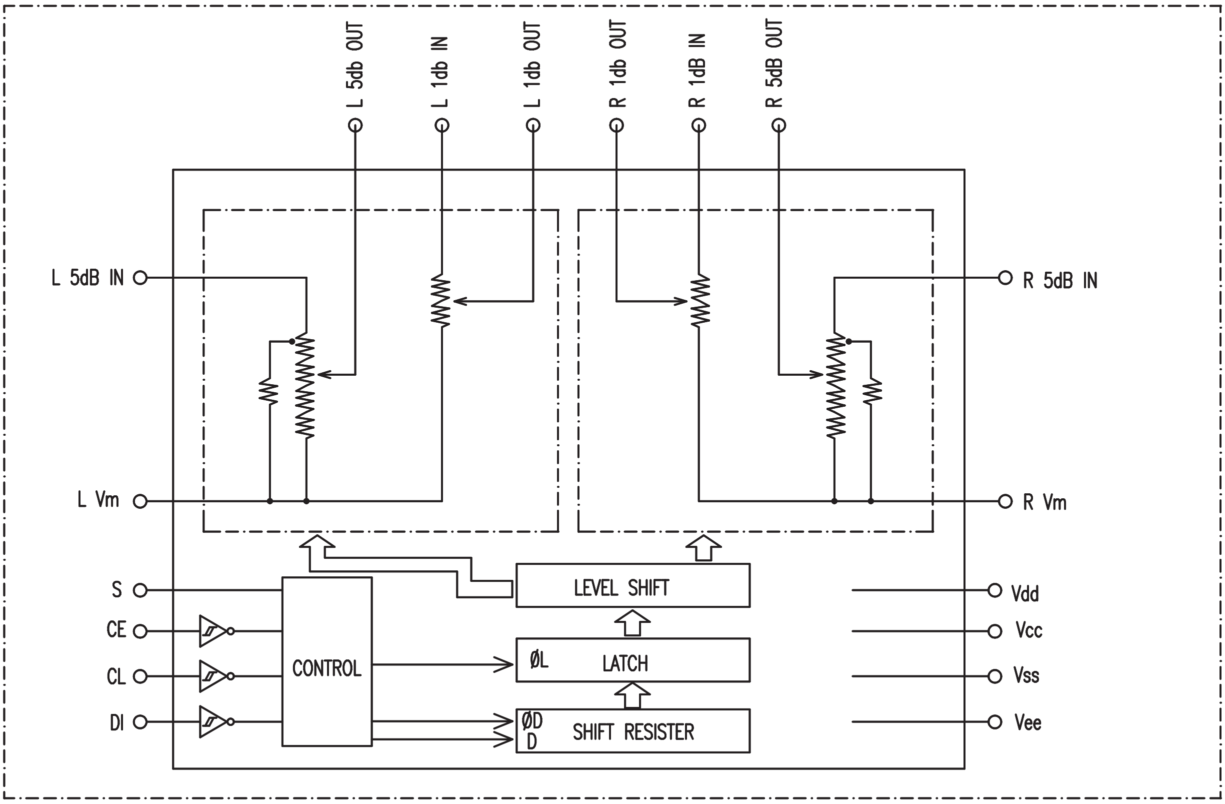
IC803 : LA3410
MPX DEMODULATOR



IC804 : BU1923
RDS DECODER (IB)



IC 106, 109, 114, 117 : LC7536
ELECTRONIC VOLUME CONTROL



IC351, 371, 372 : LA7951
VIDEO SWITCH

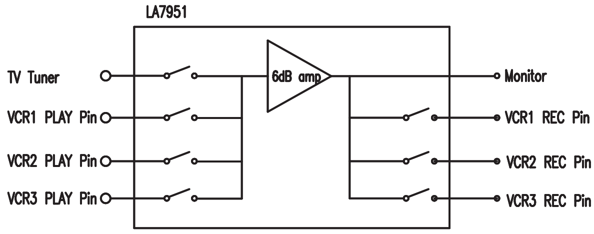


Figure 1. Editing System Switch Connections

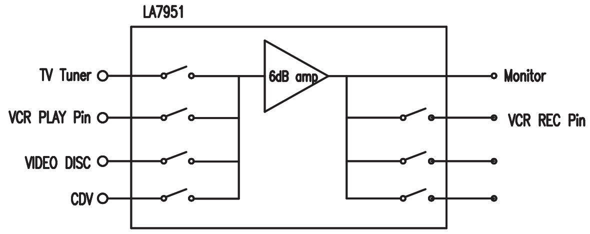
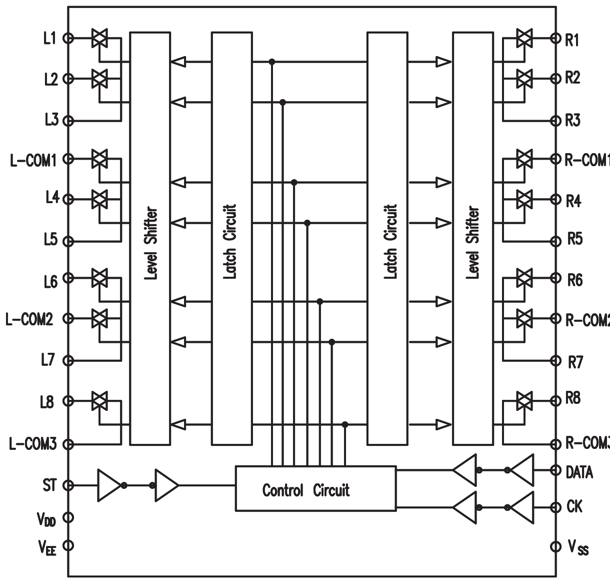
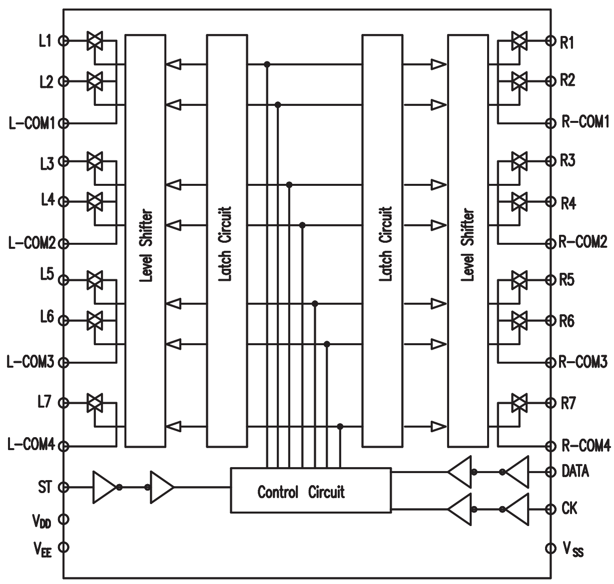


Figure 2. Video Selector Switch Connections

IC 101 : NJU7312
ANALOG FUNCTION SW.



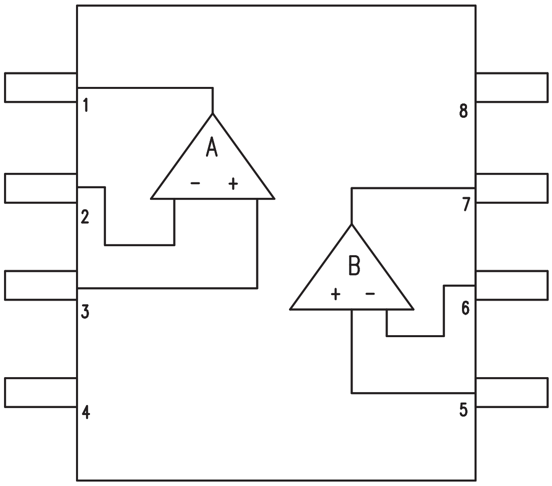
IC 105, 113 : NJU7311
ANALOG FUNCTION SW.



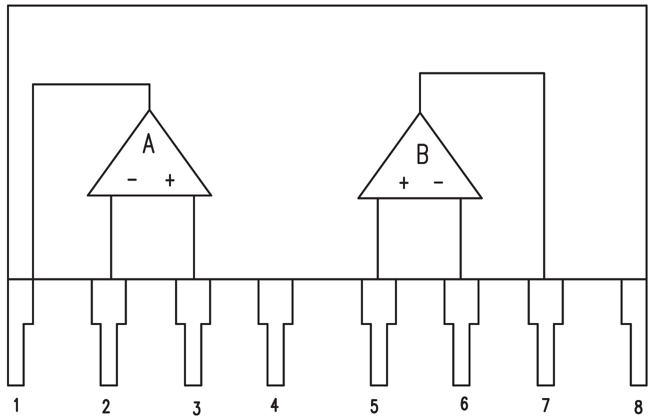
IC 103,104,107,108,110,111,112,115,116,118,119,120,702,703 704,708,723,724,725,726,902 :

NJM4558L/NJM4668M

DUAL OP-AMP



MJM4558D, MJM4558M, MJM4558V
MJM4559D, MJM4559M, MJM4559V

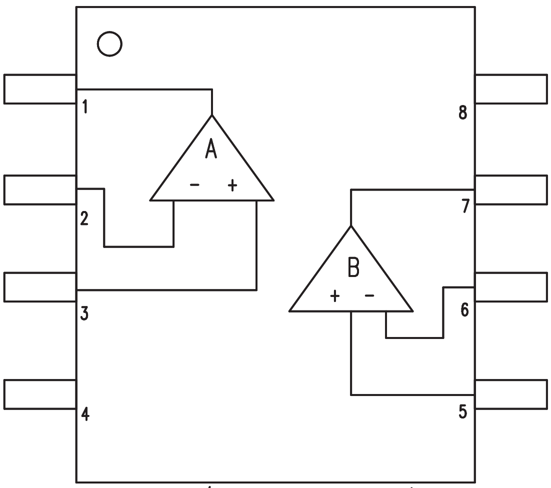


MJM4558L
MJM4558L

PIN FUNCTION
1. A OUTPUT
2. A–INPUT
3. A+INPUT
4. V–5. B+INPUT
6. B–INPUT
7. B OUTPUT
8. V

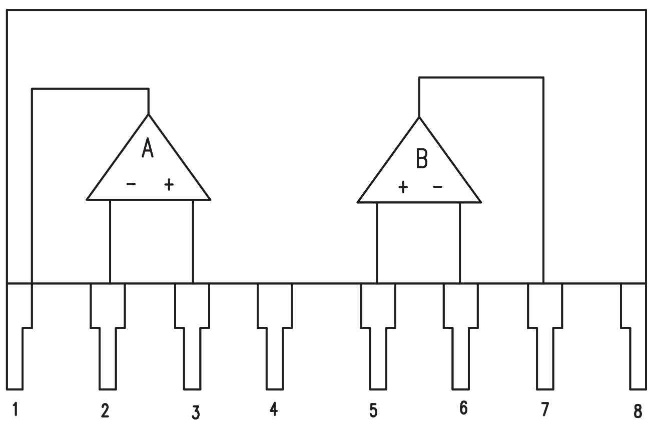
IC 701,705,706,707 :NJM072M

DUAL J-FET INPUT OP-AMP



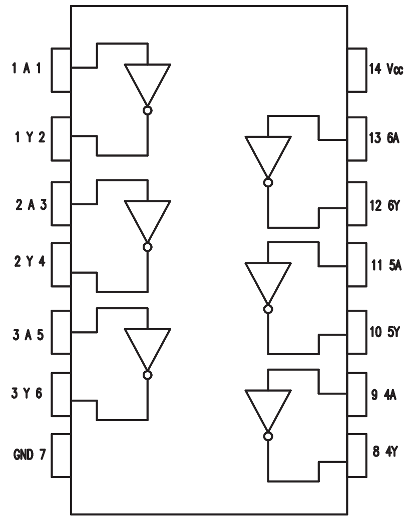
MJM072BD/082BD
MJM072D/082D
MJM072M/082M
MJM072BM/082BM
MJM072BV/082BV

PIN FUNCTION
1. A OUTPUT
2. A–INPUT
3. A+INPUT
4. V–5. B+INPUT
6. B–INPUT
7. B OUTPUT
8. V^+



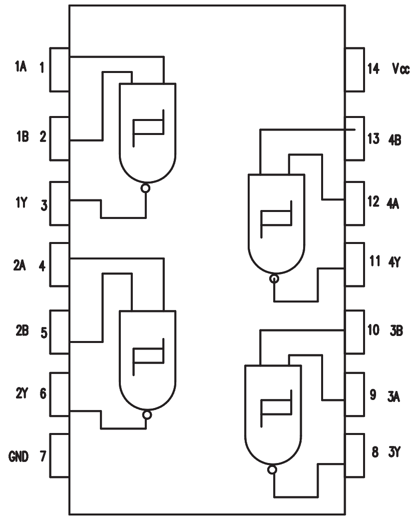
MJM072L/082L
MJM072BL/082BL

IC 712 : 74VHC04F
HEX INVERTER



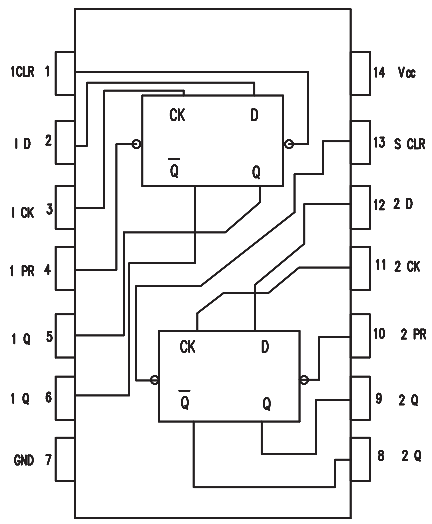
(TOP VIEW)

IC 711, 714 : TC74VHC244F
OCTAL BUS BUFFER
WITH NONINVERTED 3-STATE OUTPUTS



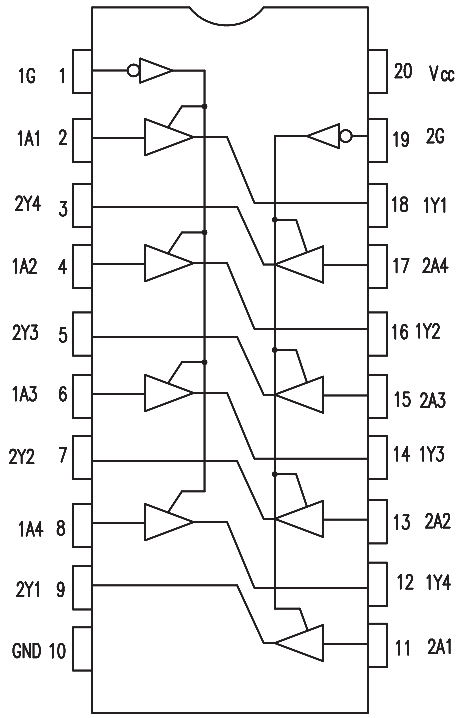
(TOP VIEW)

IC 717 : TC74VHC74F
DUAL D-FLIP FLOP



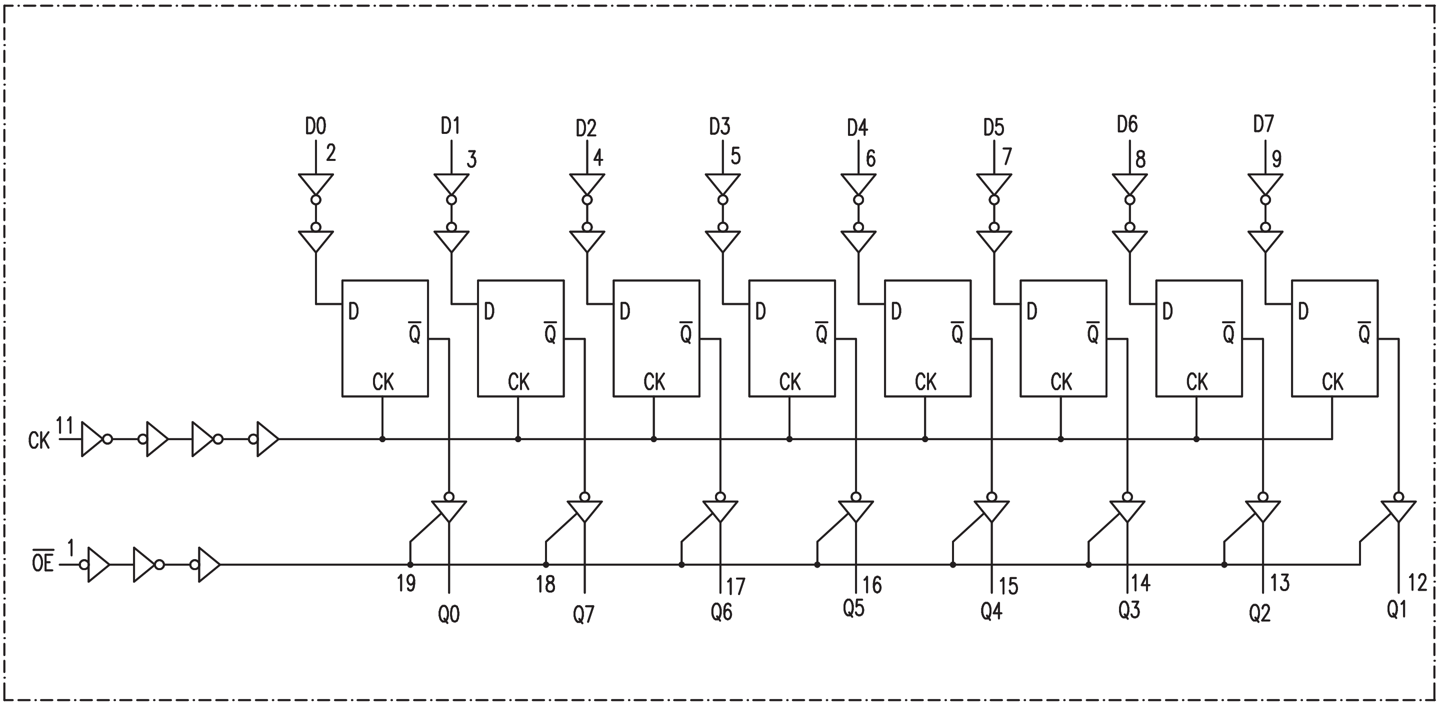
(TOP VIEW)

IC 719 : TC74VHC132F
QUAD 2-INPUT SCHMITT NAND GATE

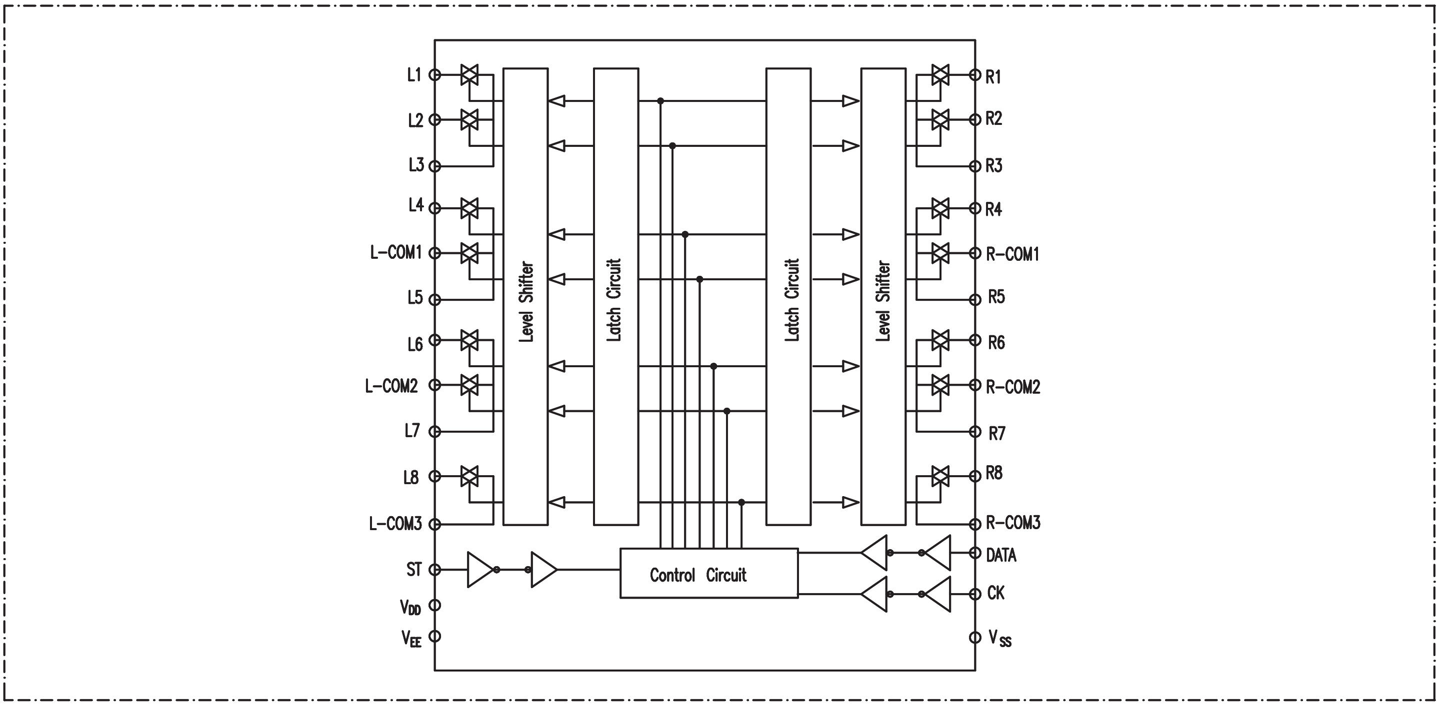


(TOP VIEW)

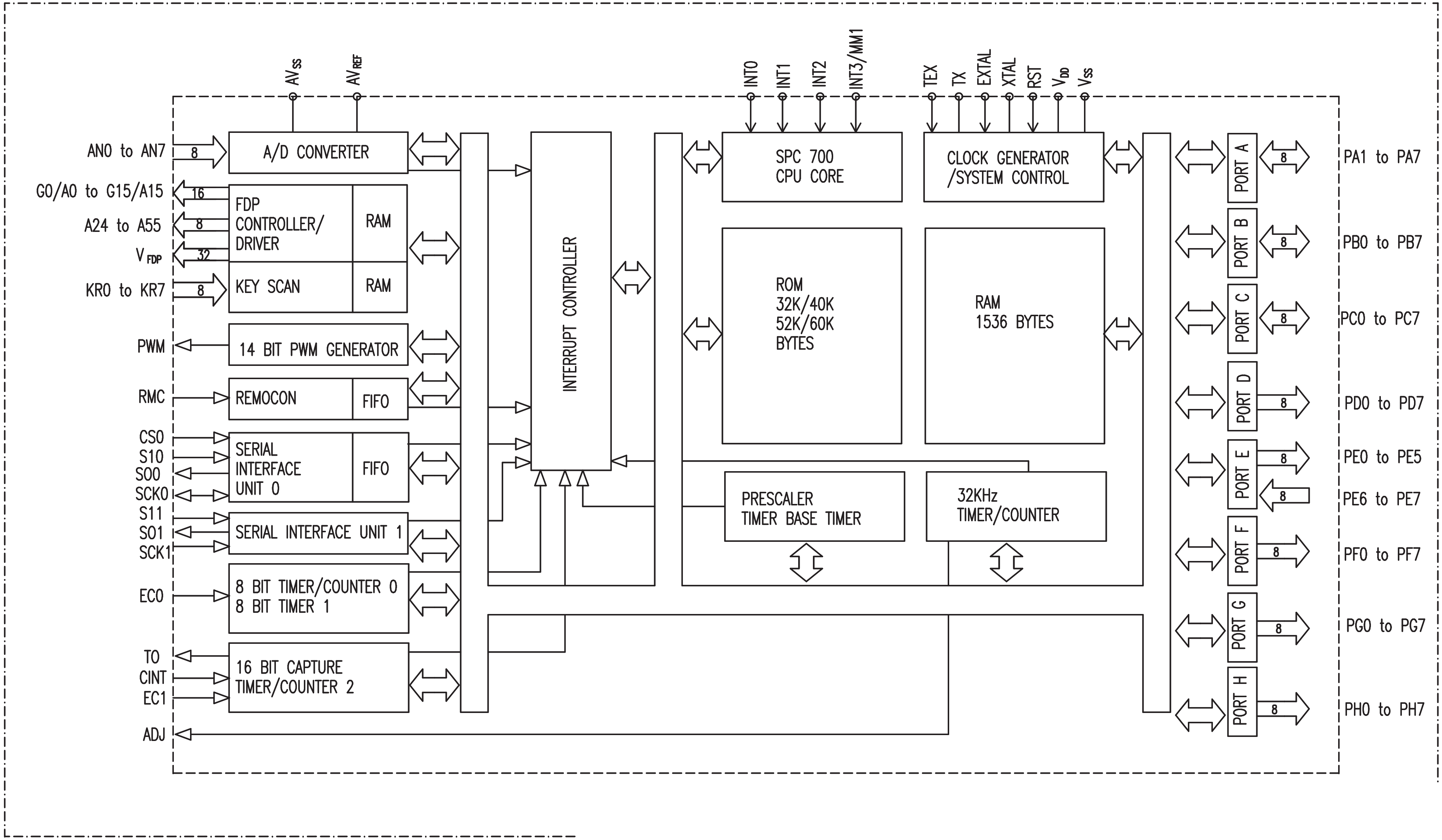
IC 715, 716 : TC74VHC574F
OCTAL D-TYPE FLIP-FLOP WITH 3-STATE OUTPUT



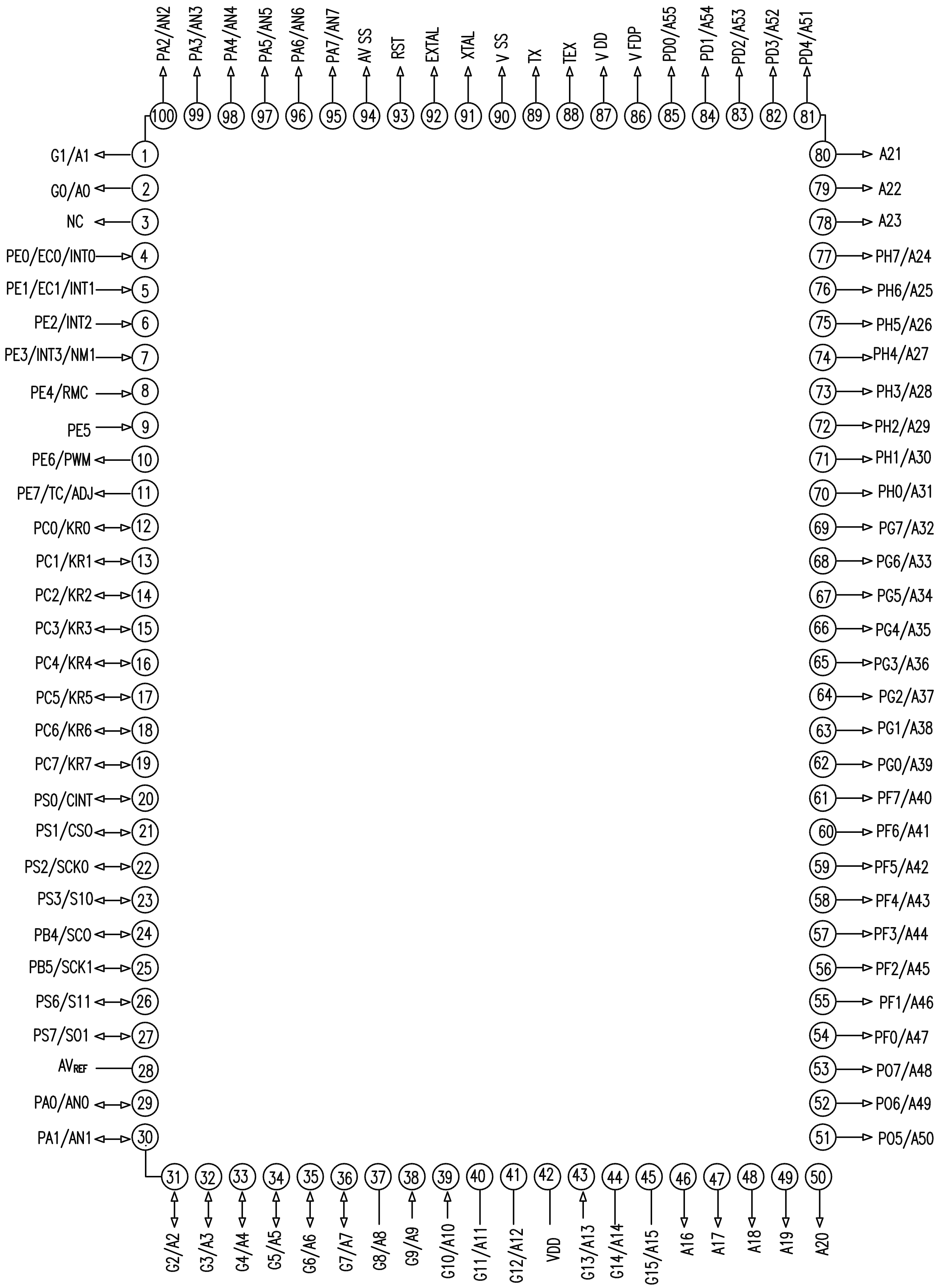
IC 102 : NJU7313
ANALOG FUNCTION SW.



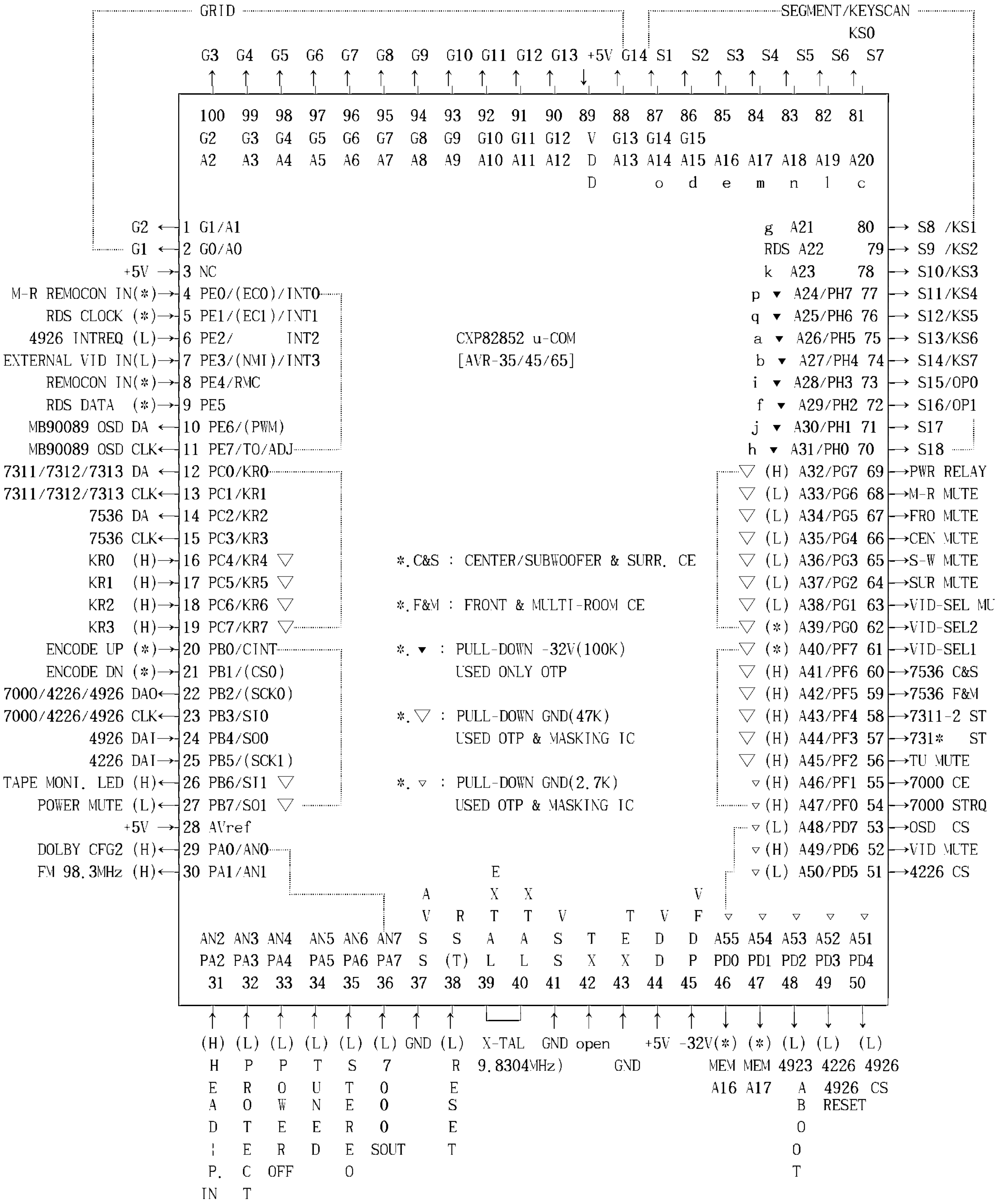
IC901 : CXP82852
BLOCK DIAGRAM



IC 901 : PIN DESCRIPTION



AC-3/DTS RDS RECEIVER CPU PIN CONFIGURATION



1.KEY MATRIX

	KS0 (81)	KS1 (80)	KS2 (79)	KS3 (78)	KS4 (77)	KS5 (76)	KS6 (75)	KS7 (74)
KR0 (16)	0.TAPE MONITOR	4.CD	8.DVD	C.VID1	10.VID2	14.VID3	18.6CHANNEL	1C.AM/FM
KR1 (17)	1.TUNING -DOWN	5.TUNING -UP	9. PRESET SCAN	D.PRESET -DOWN	11.PRESET -UP	15.(RDS) TUN.MODE	19.DOLBY DIGITAL	1D.DOLBY PROLOGIC
KR2 (18)	2.DOLBY 3STEREO	6.HALL1	A.HALL2	E.THEATER	12.DTS	16.SURR. OFF	1A.MUTE	1E.
KR3 (19)	3.SPEAKER	7.MULTI -ROOM	B.DIG. SELECT	F.DELAY	13.DOWN (◀)	17.UP (▶)	1B.SET	1F.POWER

2.OPTION DEFINITION

	OP0 (73)	OP1 (72)
KR0 (16)	OPTION1	OPTION5
KR1 (17)	OPTION2	
KR2 (18)	OPTION3	OPTION6
KR3 (19)	OPTION4	OPTION7

1) OPTION1 : Not used

2) OPTION2(RDS) : LOW(OPEN) NO FUNCTION
HIGH(DIODE) FUNCTION

3) OPTION4,OPTION3(MODEL SELECT-1) :

OPTION4	OPTION3	MODEL
LOW	LOW	AVR-35/AVR-45(refer.OPTION7)
LOW	HIGH	AVR-65

4) OPTION5(BAND) : LOW(OPEN) USA 87.5~108.0 , 520~1710
HIGH(DIODE) EUROPE 87.50~108.00 , 522~1611

5) OPTION6(TV MODE) : LOW(OPEN) NTSC
HIGH(DIODE) PAL

6) OPTION7(MODEL SELECT-2) : LOW(OPEN) AVR-45
HIGH(DIODE) AVR-35(Except 6-CH)

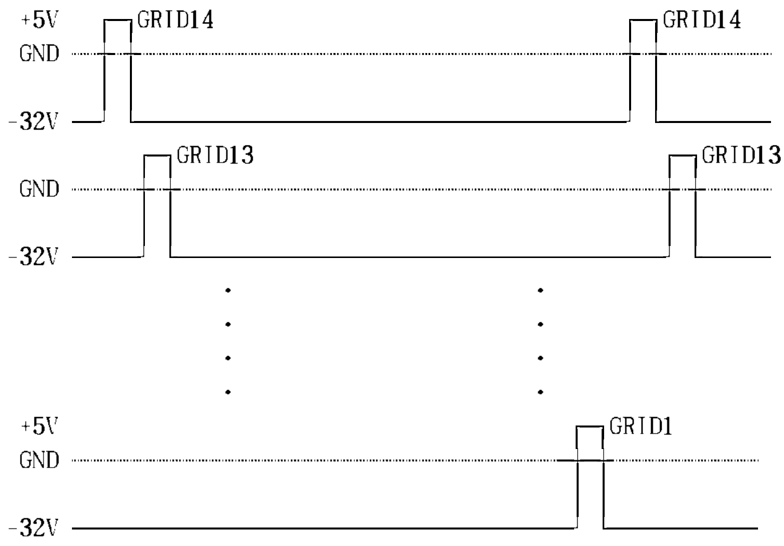
3.CS4226, CS4926 PORT INITIAL
1)CS4226 : PIN7 SPI/I2C PULL-DOWN(GND)
2)CS4926 : PIN4 WR PULL-DOWN(GND)
PIN5 RD PULL-UP(+3.3V)

4. IN/OUT PORT DESCRIPTION

Pin No.	Description	IN/OUT	Active	Function
1	GRID2	OUT	H	VFD GRID OUTPUT.(+5V ~ -32V)
2	GRID1	OUT	H	
3	NC	IN	H	+5V SUPPLY.
4	M-R REMOCON INPUT	IN	*	REMOTE INPUT FROM EXTERNAL MULTI-ROOM REMOTE MODULE. [ONLY 65 SERIES]
5	RDS CLOCK	IN	*	RDS CLOCK INPUT. [ONLY RDS VERSION]
6	CS4923 INTREQ	IN	L	SINGLE PULSE INPUT DURING OPTICAL/COAXIAL DIGITAL SELECTION.
7	EXTERNAL VIDEO INPUT	IN	L	ACTIVE WHEN VIDEO INPUT IS DETECTED FROM VIDEO FUNCTION. (DVD/VIDEO1/VIDEO2/VIDEO3) [ONLY 65 SERIES]
8	REMOCON IN	IN	*	INPUT FROM REMOTE SENSOR IN FRONT OR MULTI-ROOM REMOTE CONTROL.
9	RDS DATA	IN	*	RDS DATA INPUT. [ONLY RDS VERSION]
10	MB90089 OSD DATA	OUT	*	OSD CONTROL SIGNAL OUTPUT. [ONLY 65 SERIES]
11	MB90089 OSD CLOCK	OUT	*	
12	7311/7312/ 7313 DATA	OUT	*	CONTROL SIGNAL OUTPUT WHILE SELECTING FUNCTION OR SURROUND MODE.
13	7311/7312/ 7313 CLOCK	OUT	*	
14	7536 DATA	OUT	*	CONTROL SIGNAL OUTPUT DURING TURNING VOLUME.
15	7536 CLOCK	OUT	*	
16	KR0	IN	H	HIGH PULSE INPUT WHILE ANY ONE FUNCTION FROM TAPE MONITOR,CD,DVD, VIDEO1, VIDEO2, VIDEO3, 6-CHANNEL AND AM/FM KEY IS SELECTED.
17	KR1	IN	H	HIGH PULSE INPUT WHILE ANY KEY FROM TUNING-DOWN, TUNING-UP, PRESET SCAN, PRESET-DOWN, PRESET-UP, TUNING MODE(RDS), DOLBY DIGITAL AND DOLBY PROLOGIC IS SELECTED.
18	KR2	IN	H	HIGH PULSE INPUT WHILE ANY ONE KEY FROM THE DOLBY 3 STEREO, HALL1, HALL2, THEATER,TEST-TONE(DTS), SURR OFF AND MUTE KEY IS SELECTED.
19	KR3	IN	H	HIGH PULSE INPUT WHILE ANY ONE KEY FROM THE SPEAKER MODE, CHANNEL(MULTI-ROOM), DIGITAL SELECTION, DELAY TIME, DOWN, UP, SET AND POWER KEY IS SELECTED.
20	ENCODE UP	IN	*	PULSE INPUT WHEN MASTER VOLUME IN FRONT PANEL IS TURNED UP AND DOWN. THERE IS 90° PHASE DIFFERENCE BETWEEN ENCODER UP AND DOWN.
21	ENCODE DOWN	IN	*	
22	4226/4923/ 7000 DATA	OUT	*	COMMON PORT FOR CONTROL OF TUNER PLL(LM7000), DSP(CS4923), CODEC(CS4226) FOR EXAMPLE, CONTROL SIGNAL OF FREQUENCY SELECTION AT TUNER PLL,FUNCTION SELECTION,SURROUND MODE, SPEAKER MODE, CHANEL SELECTION, DIGITAL SELECT, DELAY TIME ADJUSTMENT ETC.
23	4226/4923/ 7000 CLOCK	OUT	*	
24	4923 DATA INPUT	IN	*	PULSE INPUT FROM DSP IC AT OPTICAL/COAXIAL DIGITAL SELECTION.
25	4226 DATA INPUT	IN	*	PULSE INPUT FROM CODEC IC AT OPTICAL/COAXIAL DIGITAL SELECTION.
26	TAPE MONI-TOR LED	OUT	H	OUTPUT WHEN TAPE MONITOR IS ON.
27	POWER MUTE	OUT	L	PULSE OUTPUT WHILE FUNCTION OR SURROUND MODE IS SELECTED AT POWER-ON OR HEAD PHONE JACK IN STATUS.

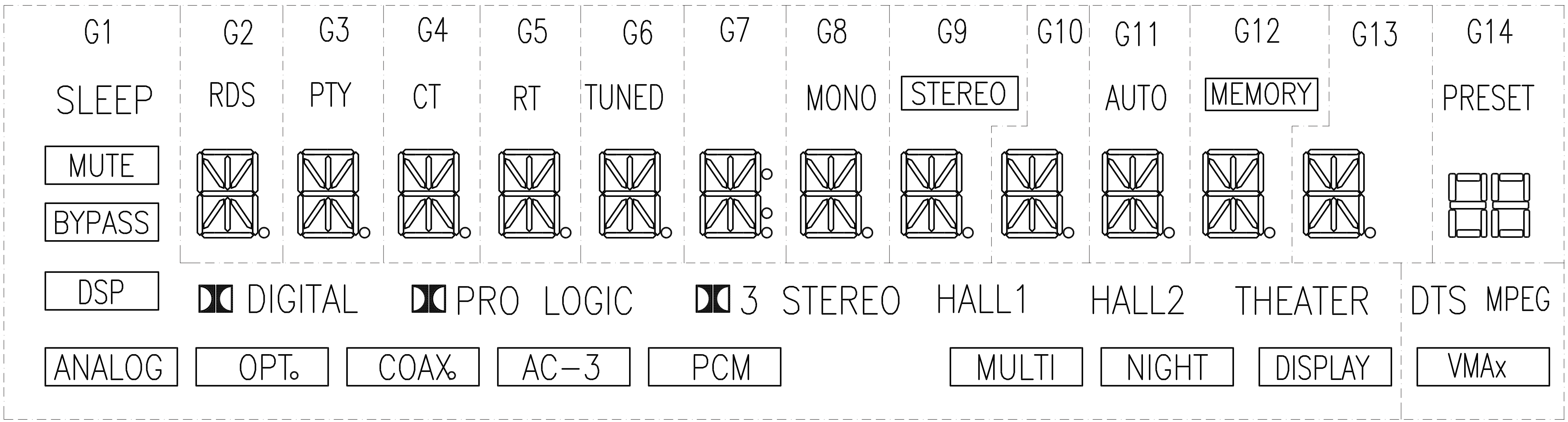
Pin No.	Description	IN/OUT	Active	Function
28	AVref	IN	H	+5V SUPPLY
29	DOLBY CFG2	OUT	H	HIGH AT CONFIGURATION 2 IN DOLBY DIGITAL AND SUB-WOOFER OFF IN DTS. CONFIGURATION 2 IS AS BELOW; SPEAKER MODE : FRONT CENTER SURROUND SUBWOOFER LARGE SMALL SMALL ON/OFF LARGE SMALL NONE ON/OFF LARGE NONE SMALL ON/OFF LARGE NONE NONE ON/OFF NOTE: NO RELATION WITH DOLBY PRO LOGIC MODE.
30	FM 98.3	OUT	H	HIGH WHILE TUNER FREQUENCY IS 98.30MHz.
31	HEAD-PHONE INPUT	IN	H	HIGH WHILE HEAD-PHONE JACK IS INSERTED.
32	PROTECT	IN	L	LOW INPUT AT PROTECTION MODE. THIS CAN BE RESET BY POWER ON AGAIN AFTER TAKING OFF PROTECTION PROBLEMS.
33	POWER OFF	IN	L	LOW INPUT WHILE DETECTING POWER OFF
34	TUNED	IN	L	LOW INPUT WHEN STATION IS TUNED.
35	STEREO	IN	L	LOW WHEN THE TUNER RECEPTION IS STEREO.
36	7000 SOUT	IN	L	LOW PULSE INPUT WHILE STATION IS TUNED AT AUTO-TUNING MODE.
37	AVSS	IN	L	GND.
38	RESET	IN	L	LOW PULSE INPUT AT THE MOMENT OF POWER ON AND OFF. BACKUP IS ACTIVATED ONLY WHEN THIS PORT IS HIGH AT POWER OFF (POWER OFF PORT IS LOW).
39	EXTAL	IN	※	u-COM X-TAL INPUT.(9.8304MHz)
40	XTAL	IN	※	
41	VSS	IN	L	GND.
42	TX	IN	open	OPEN
43	TEX	IN	L	GND.
44	VDD	IN	H	+5V POWER SUPPLY. BACKUP IS ACTIVATED WHEN THIS PORT IS HIGH AT POWER OFF (POWER OFF PORT IS LOW).
45	VFDP	IN	-32V	-32V POWER SUPPLY TO VFD
46	MEMORY ADDRESS16	OUT	H/L	ADDR.17 ADDR.16 SURROUND MODE LOW LOW DOLBY DIGITAL/PROLOGIC/3 STEREO/SURR OFF LOW HIGH HALL1/HALL2/THEATER HIGH LOW DTS : ONLY 65 SERIES HIGH HIGH DTS : ONLY 65 SERIES
47	MEMORY ADDRESS17	OUT	H/L	
48	CS4923 ABOOT	OUT	L	LOW PULSE OUTPUT WHILE ANY ONE FROM POWER, FUNCTION, SURROUND MODE OR DIGITAL SELECT IS SELECTED.
49	4226/4923 RESET	OUT	L	
50	CS4923 CS	OUT	L	LOW PULE OUT WHILE ANY ONE FROM POWER, FUNCTION, SURROUND MODE, SPEAKER MODE, CHANNEL, DIGITAL SELECT AND DELAY TIME IS SELECTED. IT IS CHIP SELECTION PORT OF CS4923(DSP), CS4226(CODEC).
51	CS4226 CS	OUT	L	
52	VID MUTE	OUT	H	KEEP HIGH LEVEL FOR 4 SECONDS AT POWER-ON.
53	OSD CS	OUT	L	CONTROL SIGNAL OUTPUT FOR OSD IC. [ONLY 65 SERIES]
54	7000 STRQ	OUT	H	HIGH PULSE OUT AT AUTO TUNING MODE.
55	7000 CE	OUT	H	CONTROL SIGNAL OUTPUT WHILE THE FREQUENCY IS CHANGED AT TUNER FUNCTION. IT IS CHIP ENABLE PORT CONTROL OF LM7000.

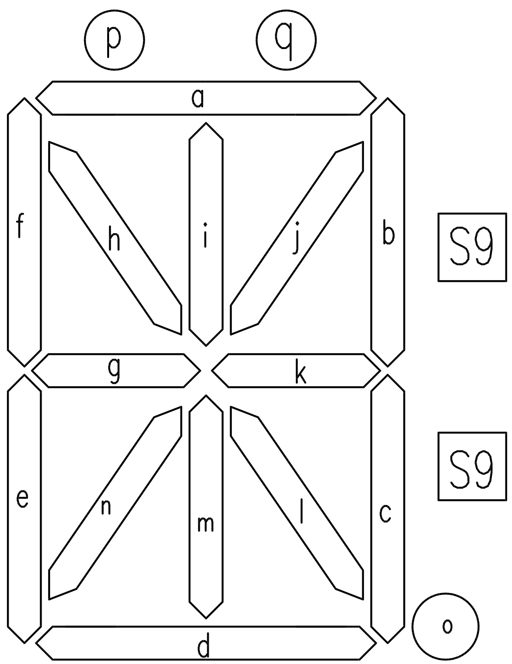
Pin No.	Description	IN/OUT	Active	Function
56	TUNER MUTE	OUT	H	HIGH PULSE OUT WHILE THE FREQUENCY IS CHANGED AT TUNER FUNCTION.
57	731* ST	OUT	H	STROBE(ENABLE) TO 7311-1, 7312, 7313
58	7311-2 ST	OUT	H	STROBE(ENABLE) TO 7311-2
59	7536 F&M	OUT	H	CHIP ENABLE OF FRONT L/R, MULTI-ROOM L/R VOLUME. HIGH PULSE OUTPUT AT VOLUME ADJUSTMENT.
60	7536 C&S	OUT	H	CHIP ENABLE CENTER, SUB-WOOFER, SURROUND L/R VOLUME. WHEN CONTROL THE VOLUME, IT WILL BE HIGH PULSE OUTPUT.
61	VID-SEL1	OUT	H/L	SEL2 SEL1 VIDEO FUNCTION LOW LOW VIDEO3 LOW HIGH VIDEO2 HIGH LOW DVD HIGH HIGH VIDEO1
62	VID-SEL2	OUT	H/L	
63	VID-SEL MU	OUT	L	LOW PULSE OUT AT SELECTING VIDEO FUNCTION.
64	SURROUND MUTE	OUT	L	LOW PULSE OUT AT SELECTING POWER, FUNCTION, SURROUND MODE, SPEAKER MODE AND DIGITAL SELECT. BUT LOW OUTPUT AT SELECTING SURROUND SPEAKER MODE "NONE".
65	SUBWOOFER MUTE	OUT	L	LOW PULSE OUT AT SELECTING POWER, FUNCTION, SURROUND MODE, SPEAKER MODE AND DIGITAL SELECT. BUT LOW OUTPUT AT SELECTING SUB-WOOFER MODE "NONE".
66	CENTER MUTE	OUT	L	LOW PULSE OUT AT SELECTING POWER, FUNCTION, SURROUND MODE, SPEAKER MODE AND DIGITAL SELECT. BUT LOW OUTPUT AT SELECTING CENTER SPEAKER MODE "NONE".
67	FRONT MUTE	OUT	L	LOW PULSE OUT AT SELECTING POWER, FUNCTION, SURROUND MODE, SPEAKER MODE AND DIGITAL SELECT. BUT LOW OUTPUT AT MUTE OR VOLUME LEVEL IS -64dB.
68	MULTI-ROOM MUTE	OUT	L	LOW PULSE OUT AT SELECTING MULTI-ROOM ON/OFF, MULTI-ROOM FUNCTION. BUT LOW OUTPUT AT MULTI-ROOM OR MULTI-ROOM LEVEL IS -64dB. (ONLY 65 SERIES)
69	POWER RELAY	OUT	H	HIGH OUTPUT AT STAND-BY POWER SWITCH ON
70	SEG18	OUT	H	PULSE OUTPUT FOR VFD SEGMENT.(+5V ~ -32V)
71	SEG17	OUT	H	
72	SEG16/ OPTION1	OUT	H	HIGH PULSE OUT FOR CHECKING SYSTEM OPTION AT POWER ON, AND HIGH PULSE FOR VFD SEGMENT.(+5V ~ -32V)
73	SEG15/ OPTION0	OUT	H	
74	SEG14/KS7	OUT	H	PULSE OUTPUT FOR KEY SCAN AND VFD SEGMENT.(+5V ~ -32V)
75	SEG13/KS6	OUT	H	
76	SEG12/KS5	OUT	H	
77	SEG11/KS4	OUT	H	
78	SEG10/KS3	OUT	H	
79	SEG9/KS2	OUT	H	
80	SEG8/KS1	OUT	H	
81	SEG7/KS0	OUT	H	
82	SEG6	OUT	H	PULSE OUTPUT FOR VFD SEGMENT.(+5V ~ -32V)
83	SEG5	OUT	H	
84	SEG4	OUT	H	

Pin No.	Description	IN/OUT	Active	Function
85	SEG3	OUT	H	PULSE OUTPUT FOR VFD SEGMENT.(+5V ~ -32V)
86	SEG2	OUT	H	
87	SEG1	OUT	H	
88	GRID14	OUT	H	VFD GRID SUPPLY.(+5V ~ -32V)
89	VDD	OUT	H	+5V POWER SUPPLY. HIGH OUT FOR BACKUP AT POWER OFF(POWER OFF PORT IS LOW).
90	GRID13	OUT	H	VFD GRID OUTPUT.(+5V ~ -32V) 
91	GRID12	OUT	H	
92	GRID11	OUT	H	
93	GRID10	OUT	H	
94	GRID9	OUT	H	
95	GRID8	OUT	H	
96	GRID7	OUT	H	
97	GRID6	OUT	H	
98	GRID5	OUT	H	
99	GRID4	OUT	H	
100	GRID3	OUT	H	

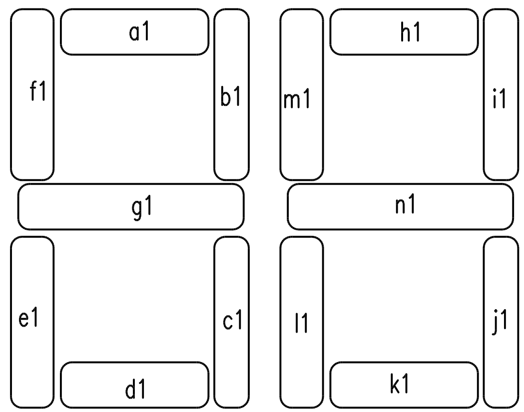
TYPE : CM1684C

ANODE & GRID ASSIGNMENT





G2~G13



G14

TYPE: CM1684C
ANODE & GRID ASIGNMENT

	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12	G13	G14
S1	THEATER	o	o	o	o	o	o	o	o	o	o	o	o	MPEG
S2	HALL 2	d	d	d	d	d	d	d	d	d	d	d	d	DTS
S3	HALL 1	e	e	e	e	e	e	e	e	e	e	e	e	k1
S4	3-STEREO	m	m	m	m	m	m	m	m	m	m	m	m	d1
S5	PLO LOGIC	n	n	n	n	n	n	n	n	n	n	n	n	e1
S6	DIGITAL	i	i	i	i	i	i	i	i	i	i	i	i	c1
S7	DISPLAY	c	c	c	c	c	c	c	c	c	c	c	c	l1
S8	NIGHT	g	g	g	g	g	g	g	g	g	g	g	g	J1
S9	MULTI	RDS	PTY	CT	RT	TUNED	□□	MONO	STEREO		AUTO	MEMORY		VMAX
S10	PCM	k	k	k	k	k	k	k	k	k	k	k	k	g1
S11	SLEEP	p	p	p	p	p	p	p	p	p	p	p	p	PRESET
S12	MUTE	q	q	q	q	q	q	q	q	q	q	q	q	a1
S13	BYPASS	a	a	a	a	a	a	a	a	a	a	a	a	h1
S14	DSP	b	b	b	b	b	b	b	b	b	b	b	b	i1
S15	ALALOG	i	i	i	i	i	i	i	i	i	i	i	i	m1
S16	OPT	f	f	f	f	f	f	f	f	f	f	f	f	f1
S17	COAX	j	j	j	j	j	j	j	j	j	j	j	j	b1
S18	AC-3	h	h	h	h	h	h	h	h	h	h	h	h	n1

PIN ASSIGNMENT

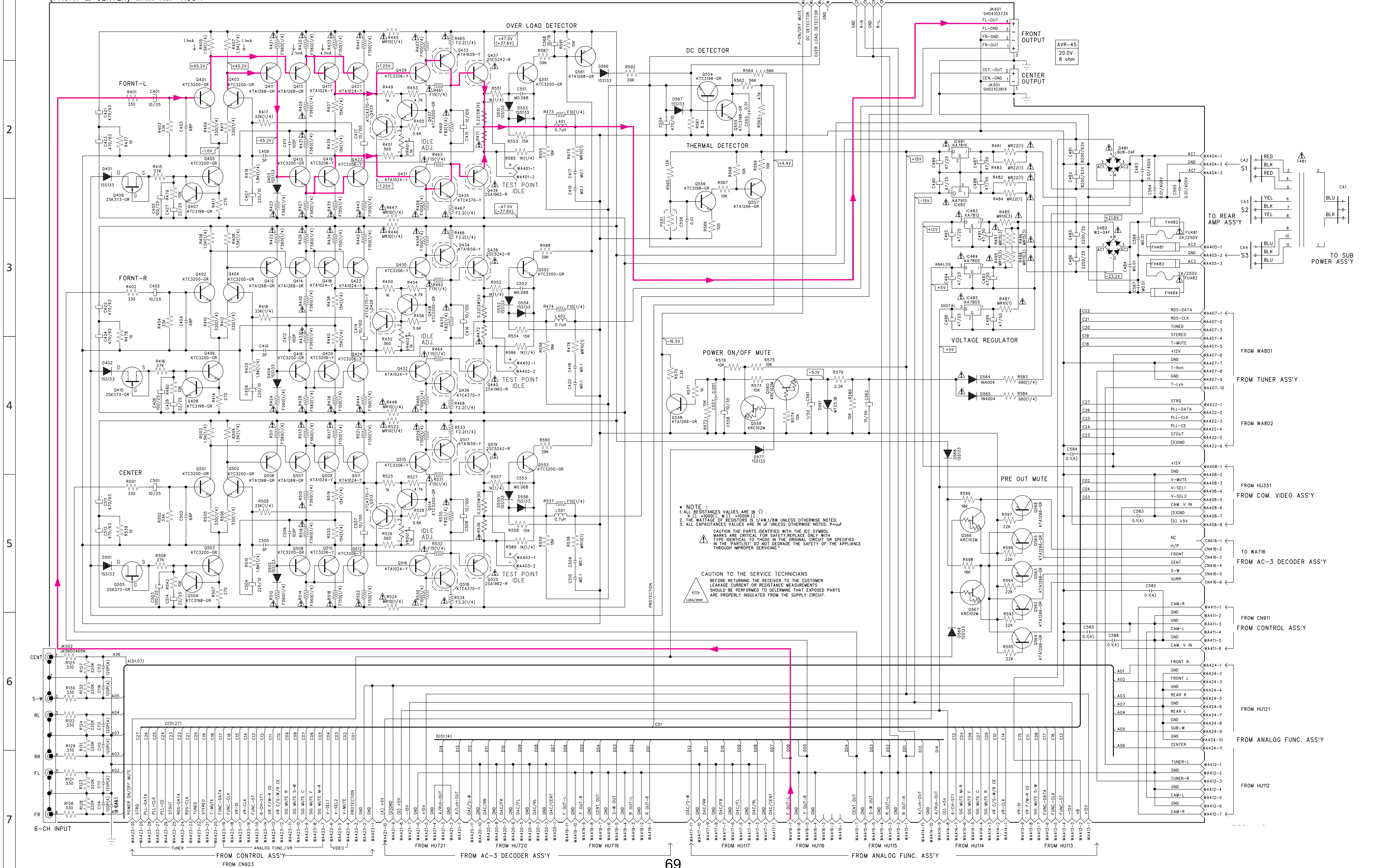
Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19～33	34
Assignment	F1	F1	NP	NL	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12	G13	G14	NL	S1

Pin No.	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55
Assignment	S2	S3	S4	S5	S6	S7	S8	G4	S10	S11	S12	S13	S14	S15	S16	S17	S18	NL	NP	F2	F2

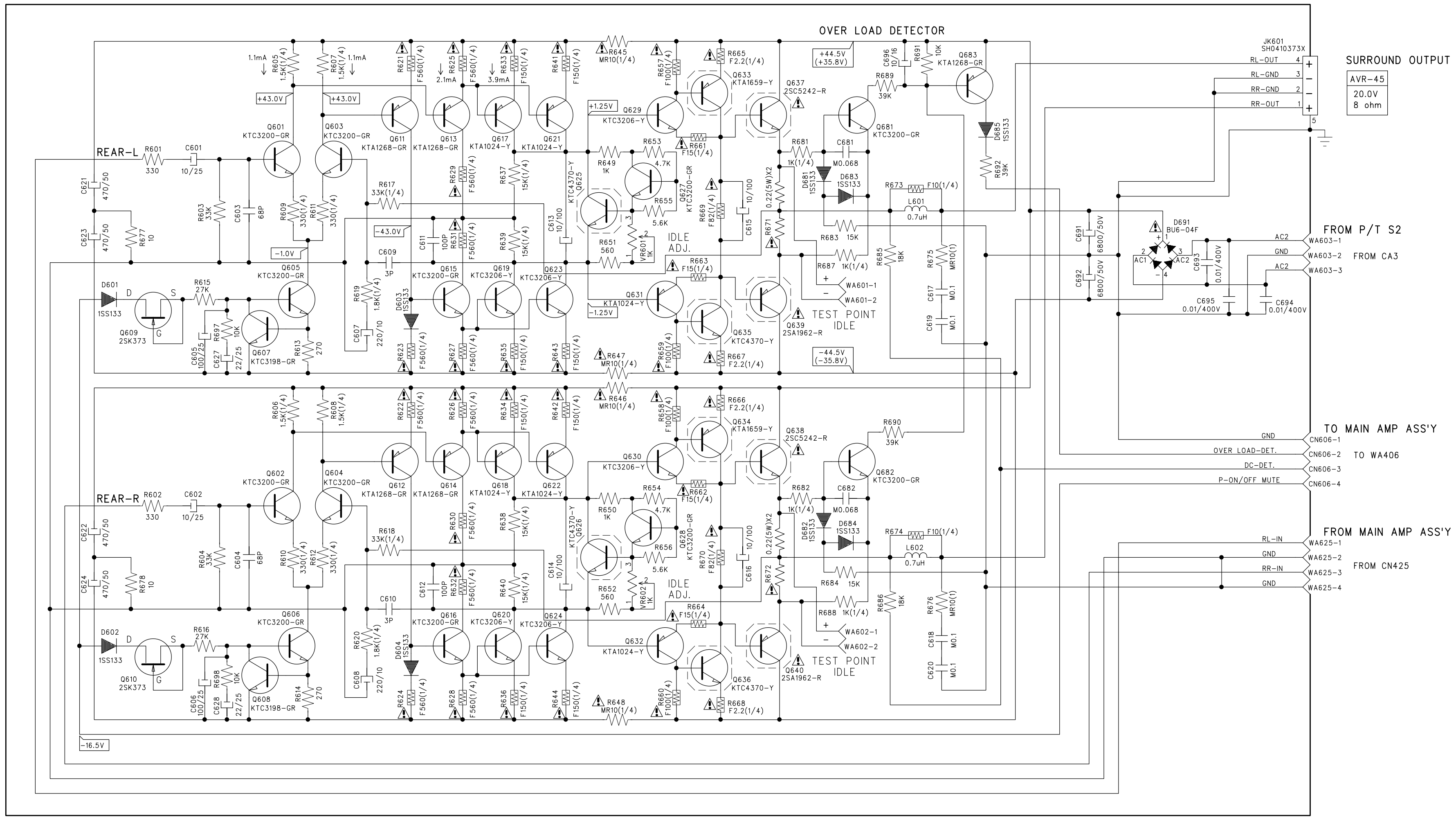
F1, F2 : Filament G1～G14 : Grid S1～S18 : Anode NL : No Lead NP : No Pin

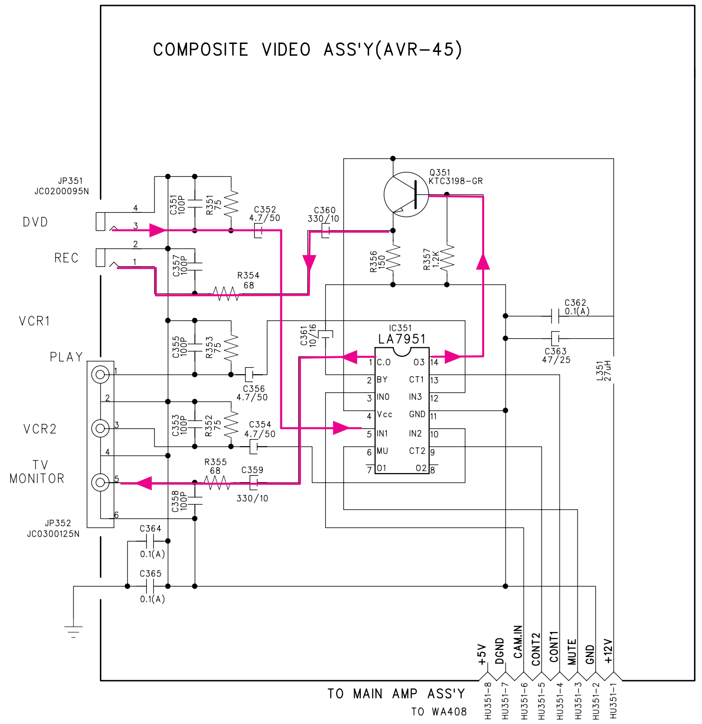
AVR-45 SCHEMATIC DIAGRAM (MAIN AMP P.C.Board)

(FRONT & CENTER) MAIN AMP ASS'Y



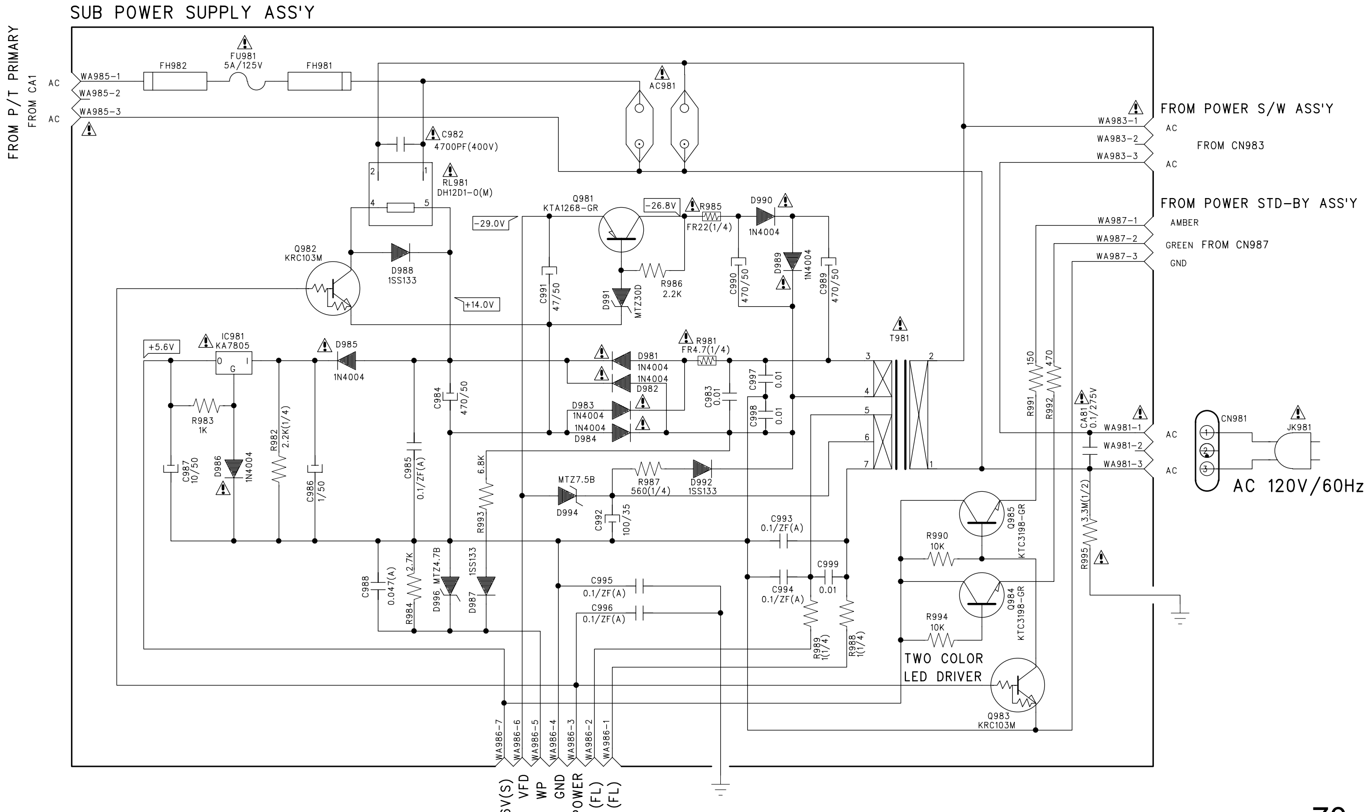
AVR-45 SCHEMATIC DIAGRAM (REAR AMP. C-VIDEO. SUB P.C.Board)

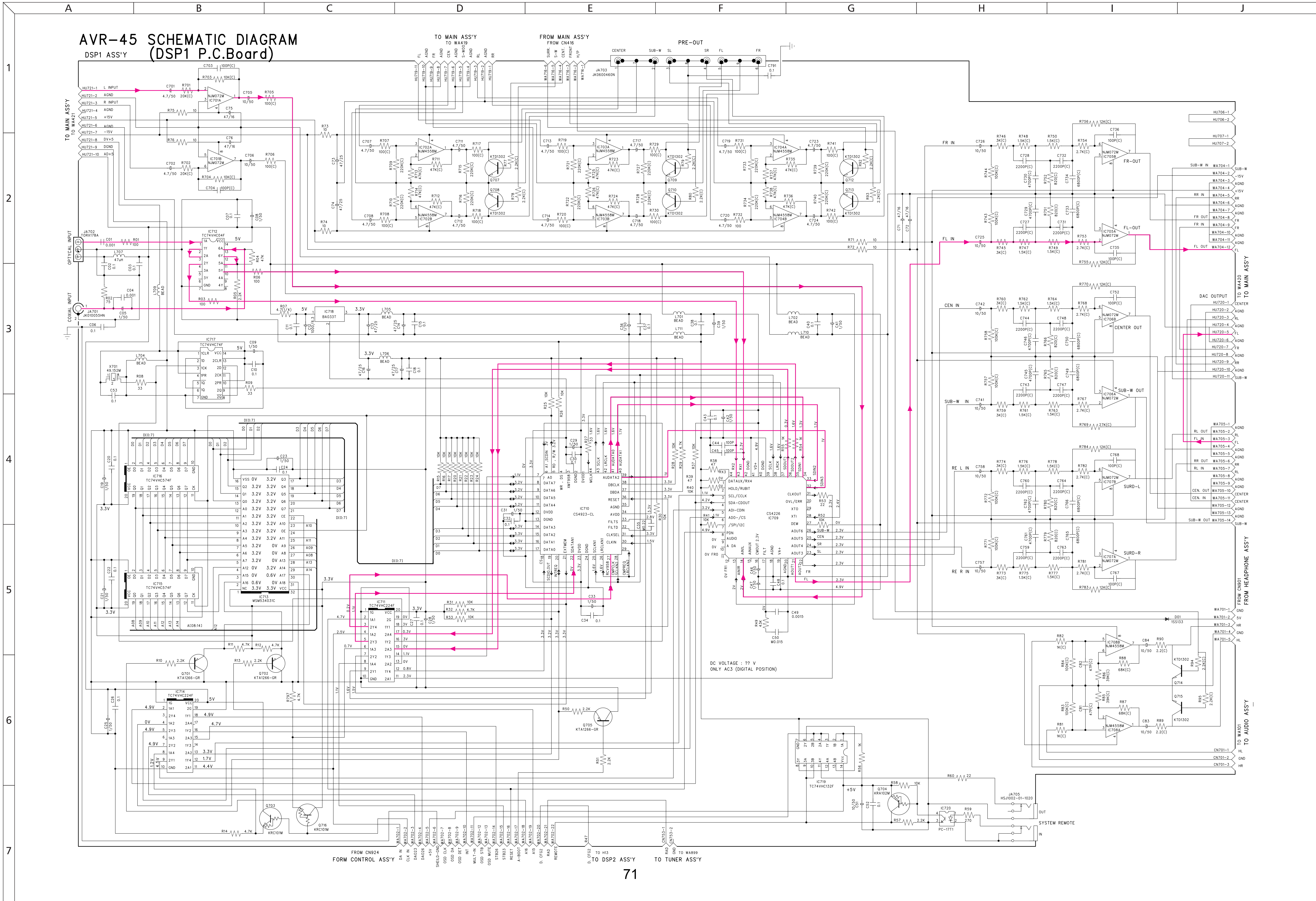




COMPOSITE & S-VIDEO

INPUT FUNCTION	CONTROL			OUTPUT	
	MUTE	CT1	CT2	C-OUT	OUT-3
OTHER	L	*	*	OFF	OFF
CAMCODER	H	L	L	CAMCODER	
DVD	H	L	H	DVD	
VCR2	H	H	L	VCR2	
VCR1	H	H	H	VCR1	OFF

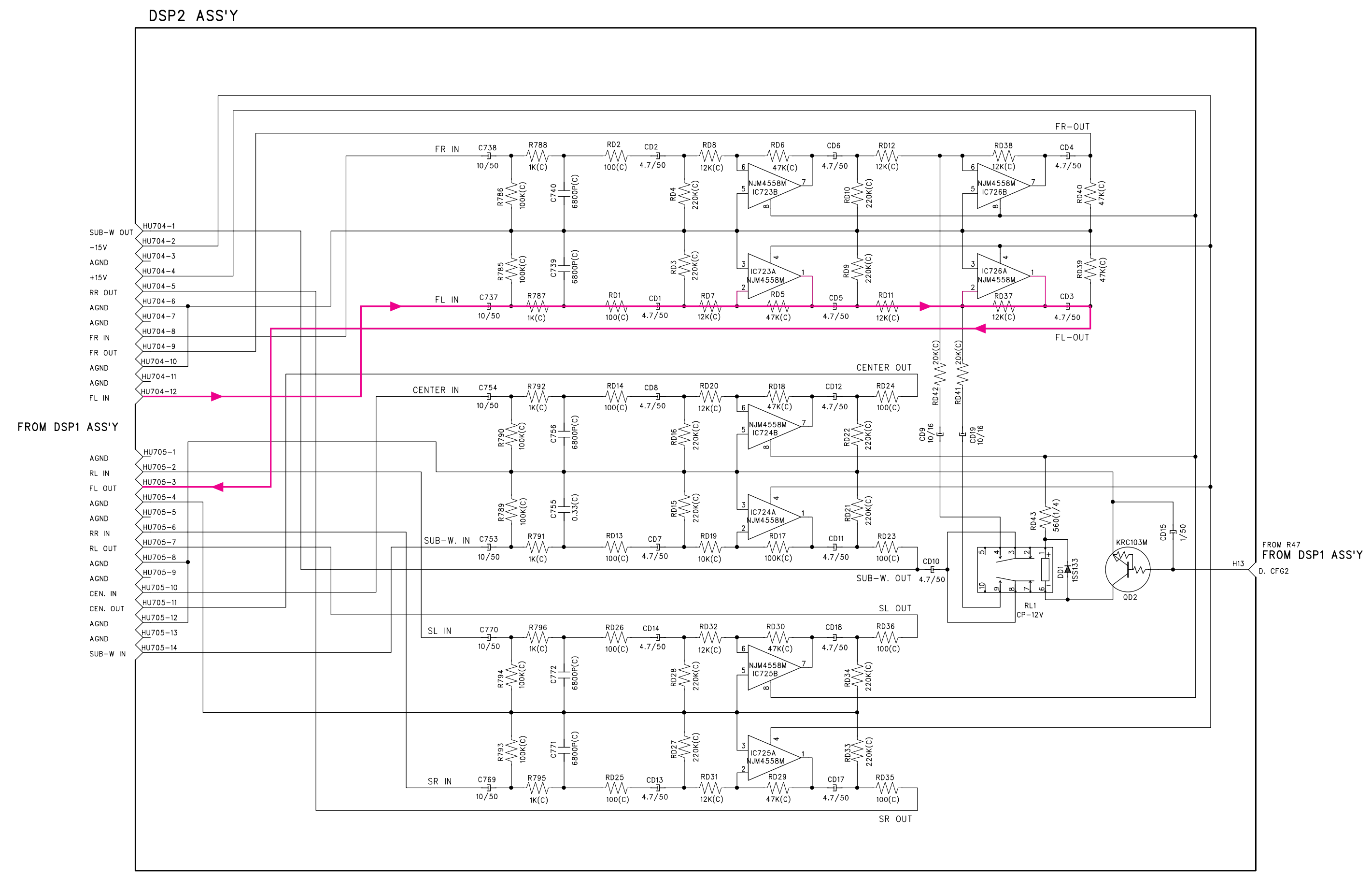



AVR-45 SCHEMATIC DIAGRAM
DSP1 ASS'Y (DSP1 P.C.Board)
TO MAIN ASS'Y TO WA421
TO MAIN ASS'Y TO WA419
FROM MAIN ASS'Y FROM CN416
PRE-OUT
CENTER
SUB-W
SL
SR
FL
FR
OPTYCAL INPUT
COXIAL INPUT
FR-OUT
FL-OUT
CENTER OUT
SUB-W OUT
SURD-L
SURD-R
DAC OUTPUT
TO WA420 TO MAIN ASS'Y
FROM CN901 FROM HEADPHONE ASS'Y
TO WA101 TO AUDIO ASS'Y
SYSTEM REMOTE
DC VOLTAGE : ?? V
ONLY AC3 (DIGITAL POSITION)
FROM CN924 FORM CONTROL ASS'Y
TO H13 TO DSP2 ASS'Y
TO WA899 TO TUNER ASS'Y
CS4923-CL
CS4226
MSM534031C
TC74VHC574F
TC74VHC224F
TC74VHC04F
TC74VHC74F
TC74VHC132F
BA033T
NJM072M
NJM4558M

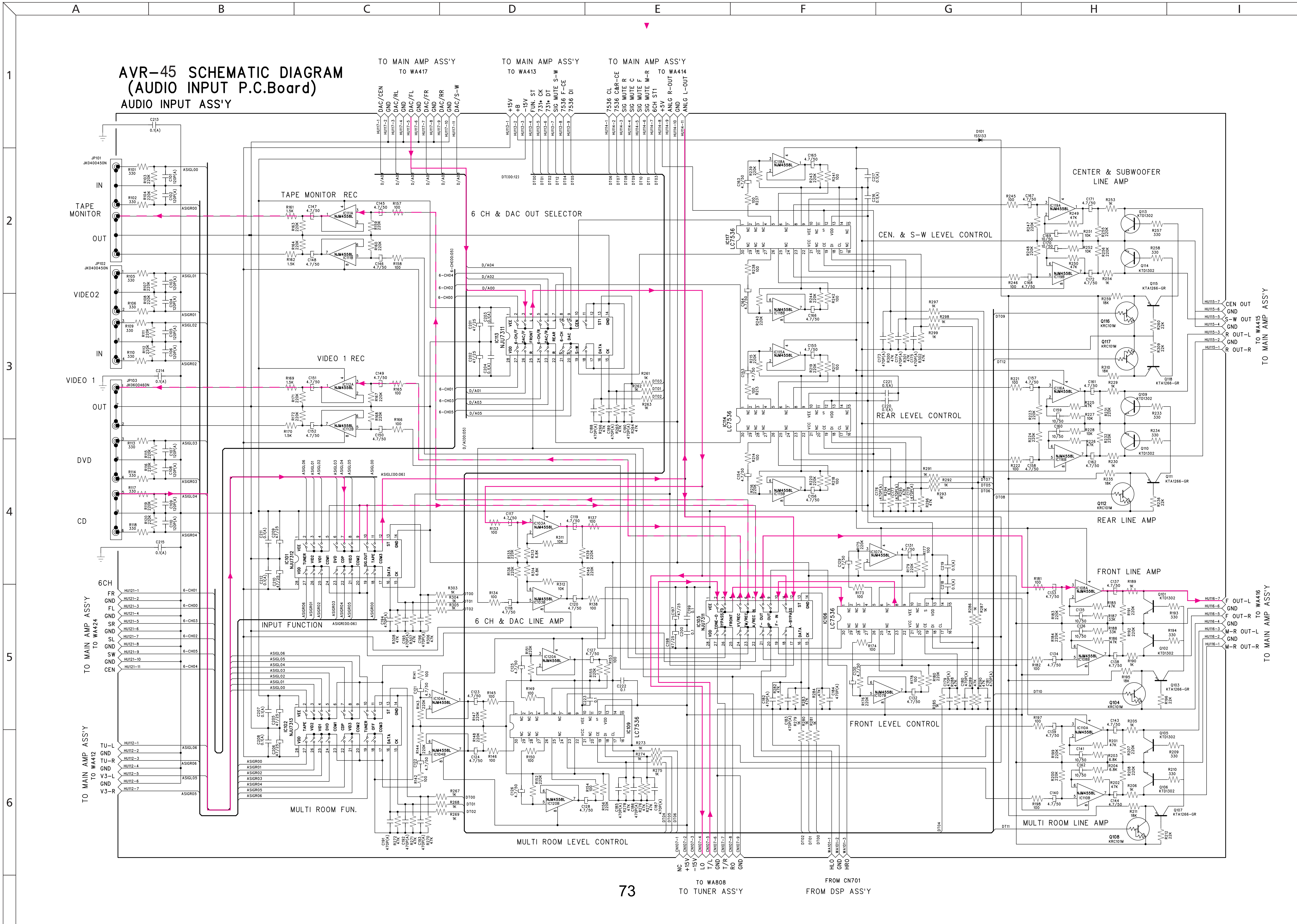
A B C D E F G H I J

1 2 3 4 5 6 7

AVR-45 SCHEMATIC DIAGRAM (DSP2 P.C.Board)

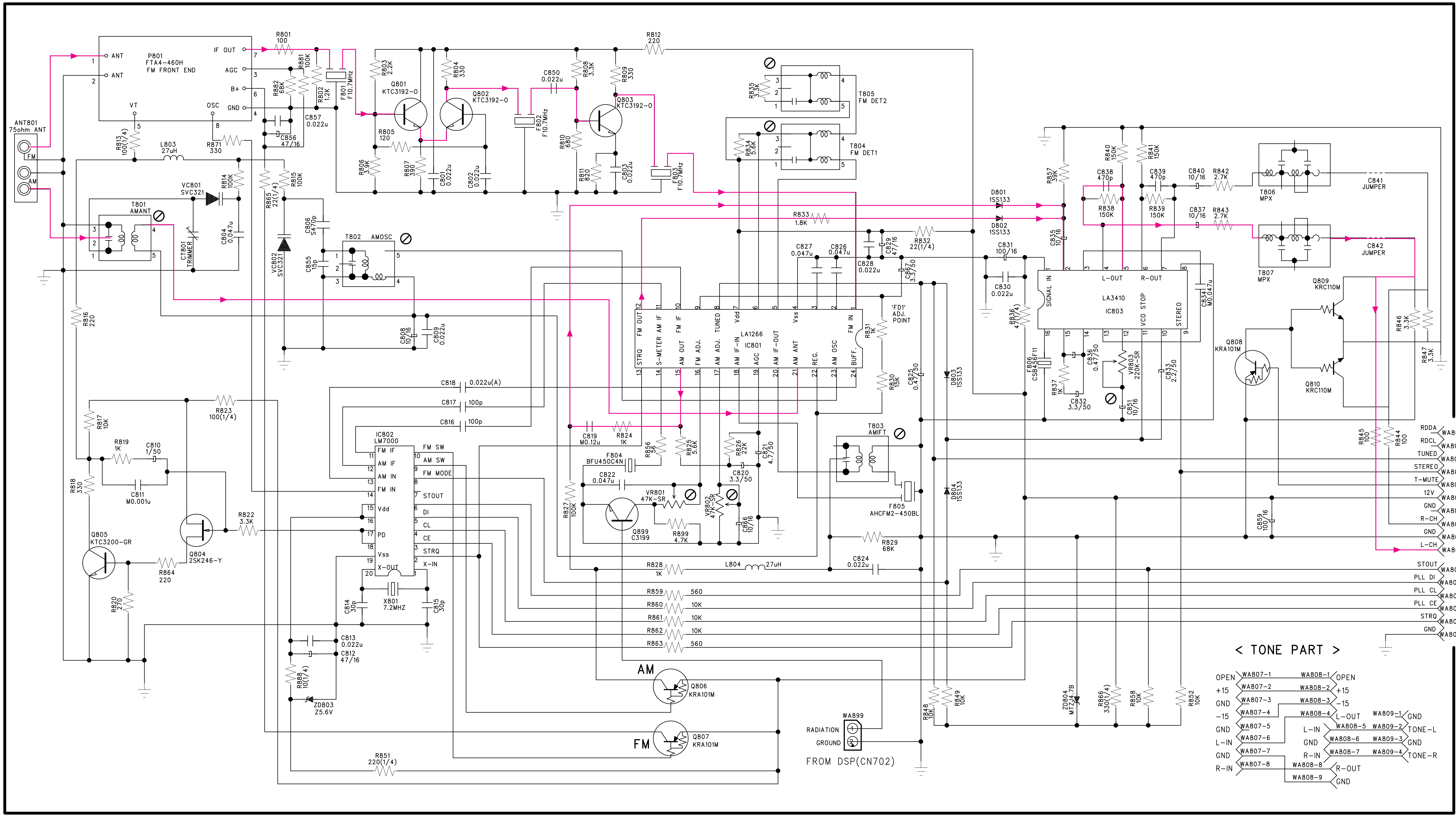


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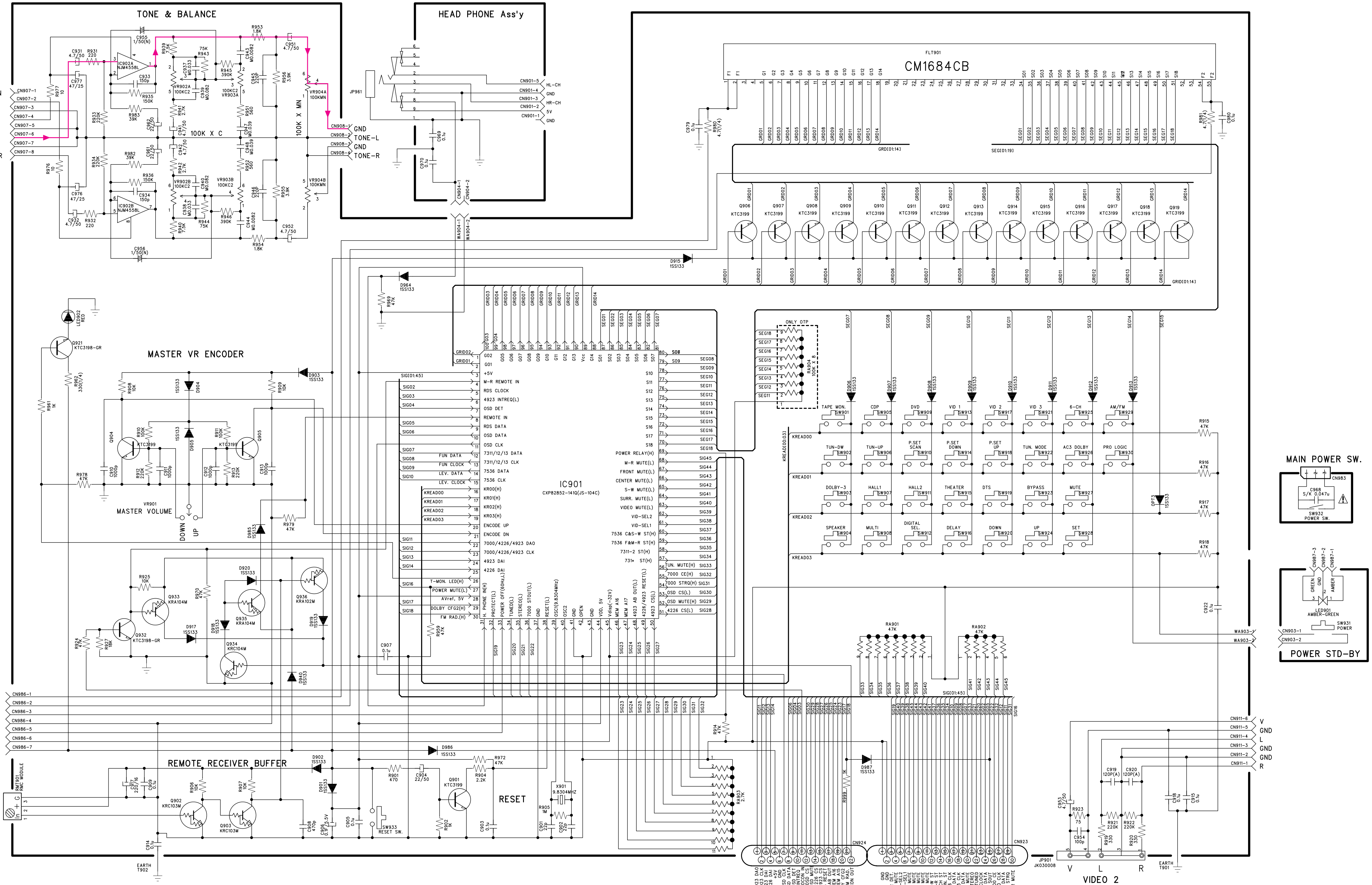

AVR-45 SCHEMATIC DIAGRAM
(AUDIO INPUT P.C.Board)
AUDIO INPUT ASS'Y
TO MAIN AMP ASS'Y
TO WA417
TO WA413
TO WA414
TAPE MONITOR REC
6 CH & DAC OUT SELECTOR
CEN. & S-W LEVEL CONTROL
CENTER & SUBWOOFER LINE AMP
TAPE MONITOR
IN
OUT
VIDEO2
VIDEO 1
VIDEO 1 REC
DVD
CD
REAR LEVEL CONTROL
REAR LINE AMP
6 CH & DAC LINE AMP
INPUT FUNCTION
FRONT LINE AMP
FRONT LEVEL CONTROL
MULTI ROOM FUN.
MULTI ROOM LEVEL CONTROL
MULTI ROOM LINE AMP
6CH
TO MAIN AMP ASS'Y
TO WA424
TO WA412
TO WA415
TO WA416
TO WA808
TO TUNER ASS'Y
FROM CN701
FROM DSP ASS'Y

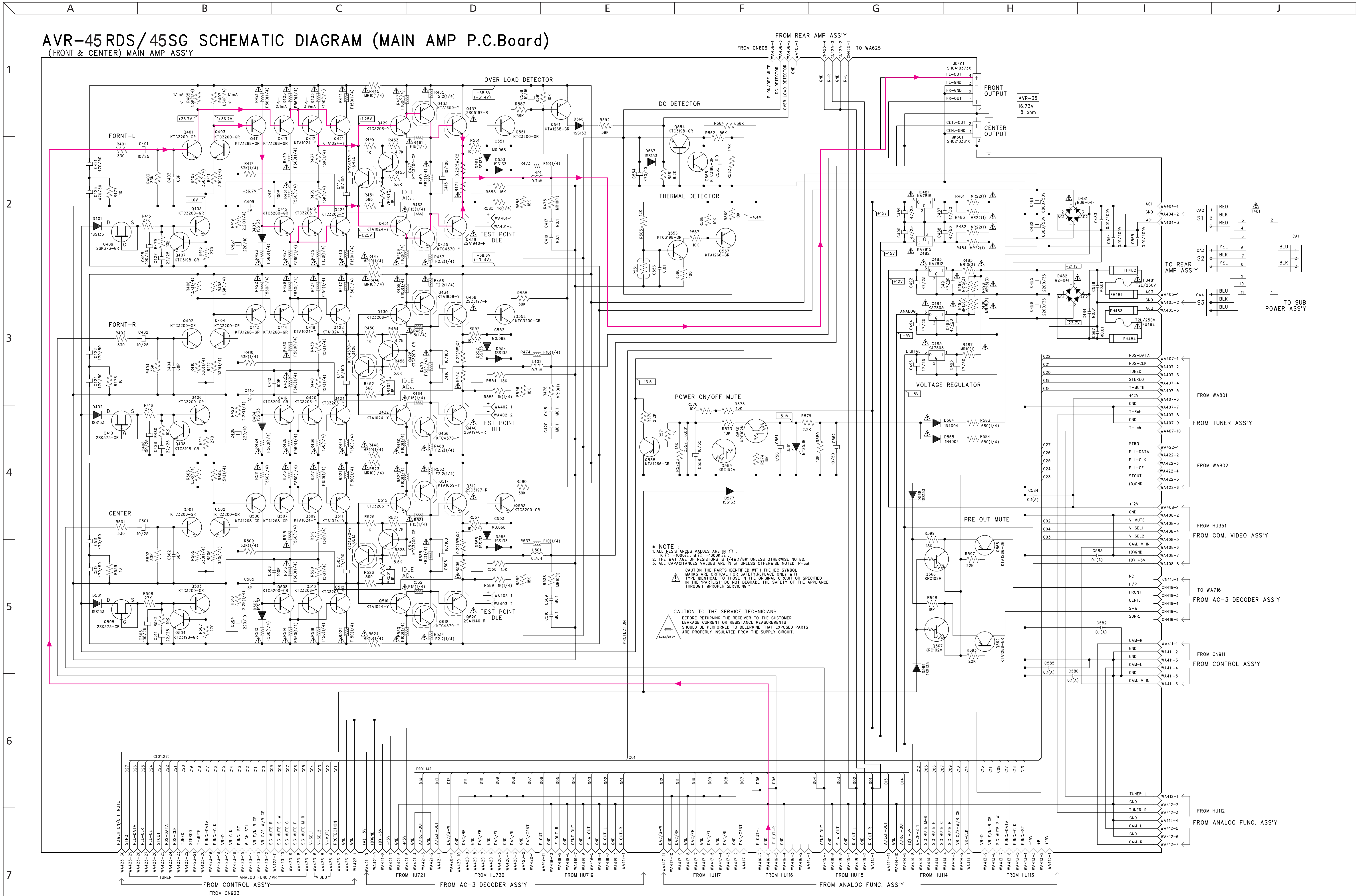
A	B	C	D	E	F	G	H	I	J

AVR-45 TUNER SCHEMATIC DIAGRAM (TUNER P.C.Board)

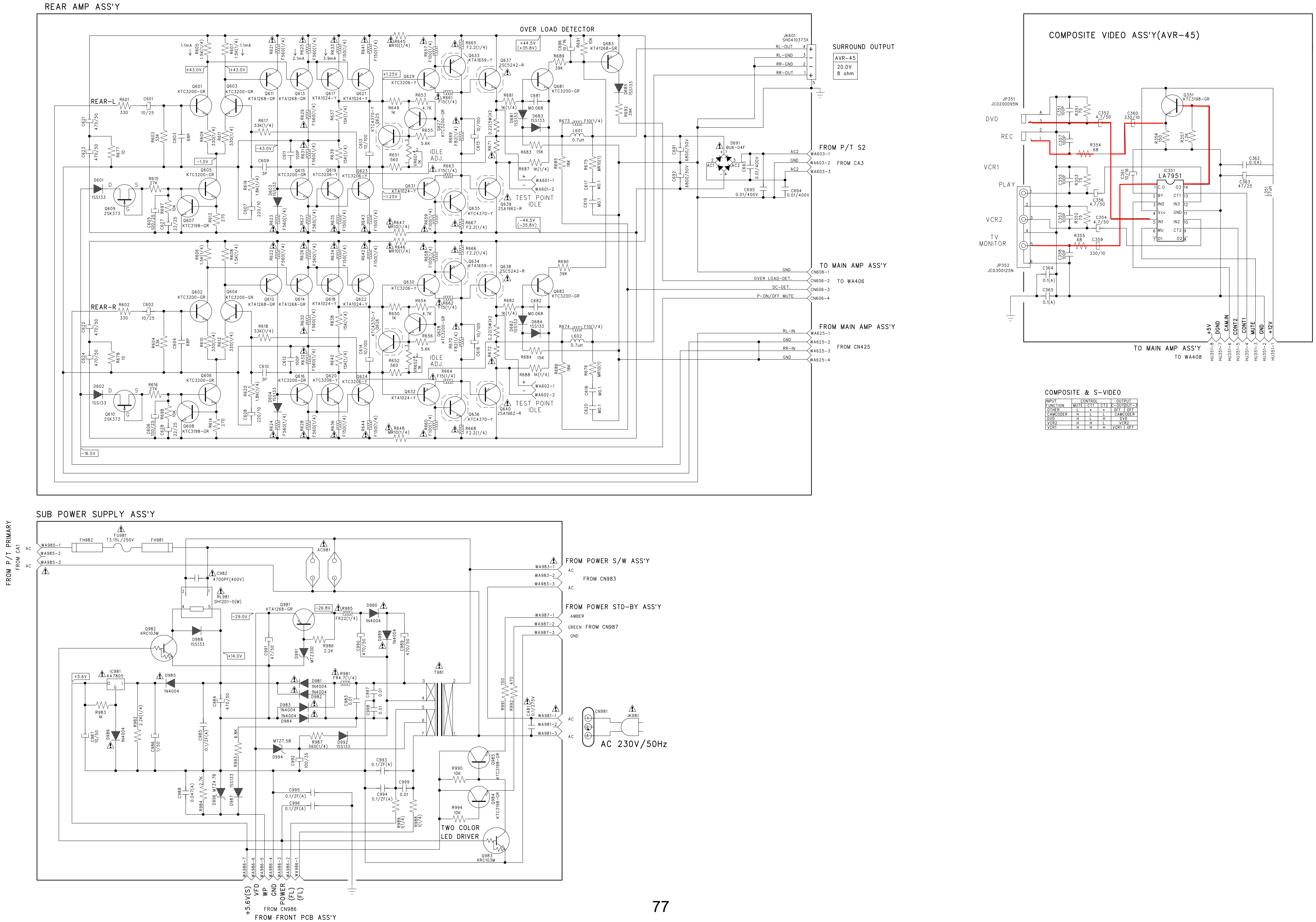


AVR-45 u-COM & F.L.DISPLAY SCHEMATIC DIAGRAM (FRONT P.C.Board)

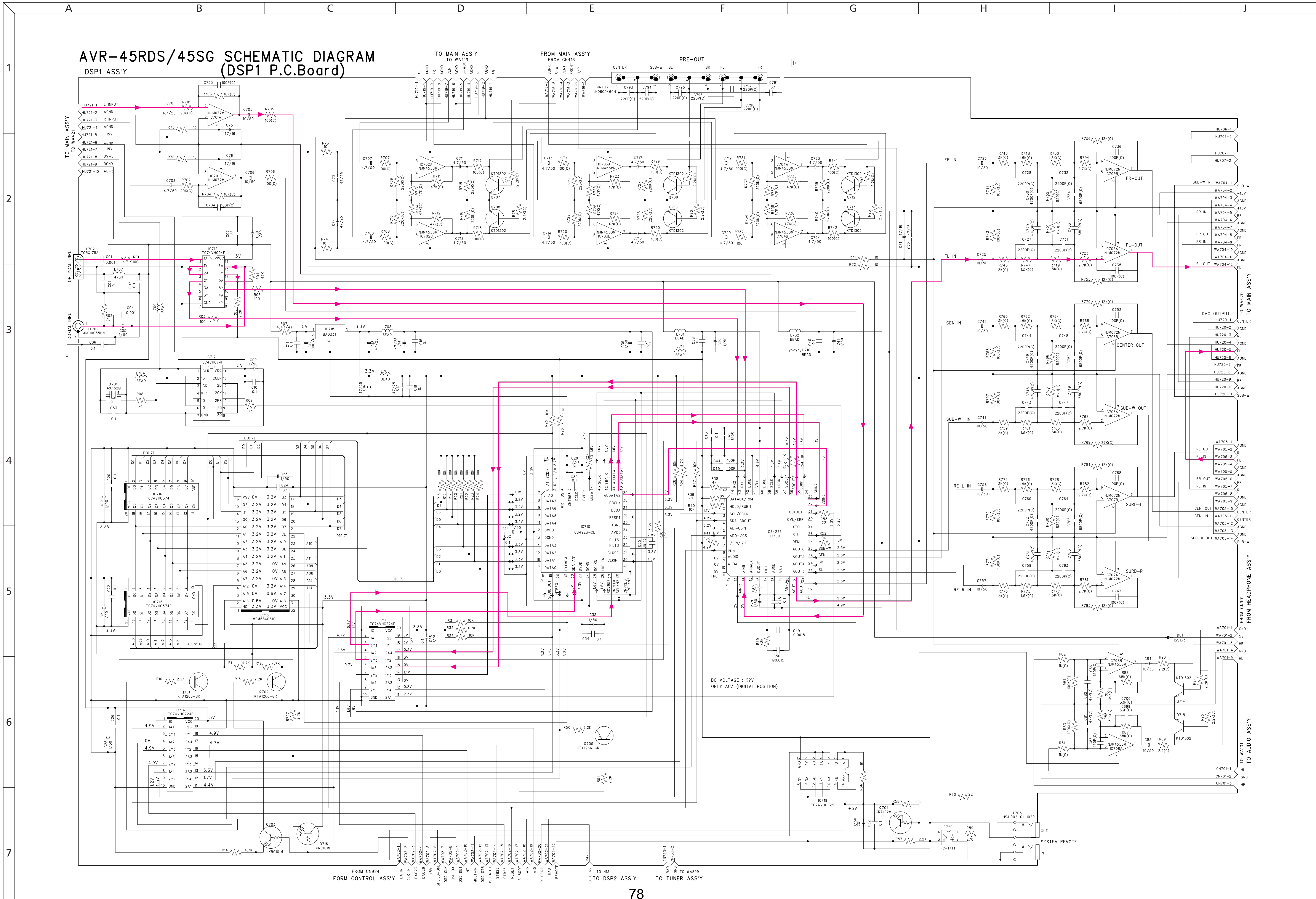



AVR-45 RDS/45SG SCHEMATIC DIAGRAM (MAIN AMP P.C.Board)
(FRONT & CENTER) MAIN AMP ASS'Y
OVER LOAD DETECTOR
DC DETECTOR
THERMAL DETECTOR
FRONT OUTPUT
CENTER OUTPUT
FORNT-L
FORNT-R
CENTER
IDLE ADJ.
TEST POINT IDLE
VOLTAGE REGULATOR
POWER ON/OFF MUTE
PRE OUT MUTE
FROM REAR AMP ASS'Y
TO WA625
TO REAR AMP ASS'Y
TO SUB POWER ASS'Y
FROM TUNER ASS'Y
FROM COM. VIDEO ASS'Y
FROM AC-3 DECODER ASS'Y
FROM CONTROL ASS'Y
FROM ANALOG FUNC. ASS'Y
NOTE :
1. ALL RESISTANCES VALUES ARE IN Ω.
K Ω =1000 Ω, M Ω =1000K Ω
2. THE WATTAGE OF RESISTORS IS 1/4W,1/8W UNLESS OTHERWISE NOTED.
3. ALL CAPACITANCES VALUES ARE IN uF UNLESS OTHERWISE NOTED. P=uuF
CAUTION THE PARTS IDENTIFIED WITH THE IEC SYMBOL MARKS ARE CRITICAL FOR SAFETY,REPLACE ONLY WITH TYPE IDENTICAL TO THOSE IN THE ORIGINAL CIRCUIT OR SPECIFIED IN THE "PARTLIST" DO NOT DEGRADE THE SAFETY OF THE APPLIANCE THROUGH IMPROPER SERVICING."
CAUTION TO THE SERVICE TECHNICIANS
BEFORE RETURNING THE RECEIVER TO THE CUSTOMER LEAKAGE CURRENT OR RESISTANCE MEASUREMENTS SHOULD BE PERFORMED TO DELERMINE THAT EXPOSED PARTS ARE PROPERLY INSULATED FROM THE SUPPLY CIRCUIT.

AVR-45RDS/45SG SCHEMATIC DIAGRAM
(REAR AMP. C-VIDEO. SUB P.C.Board)



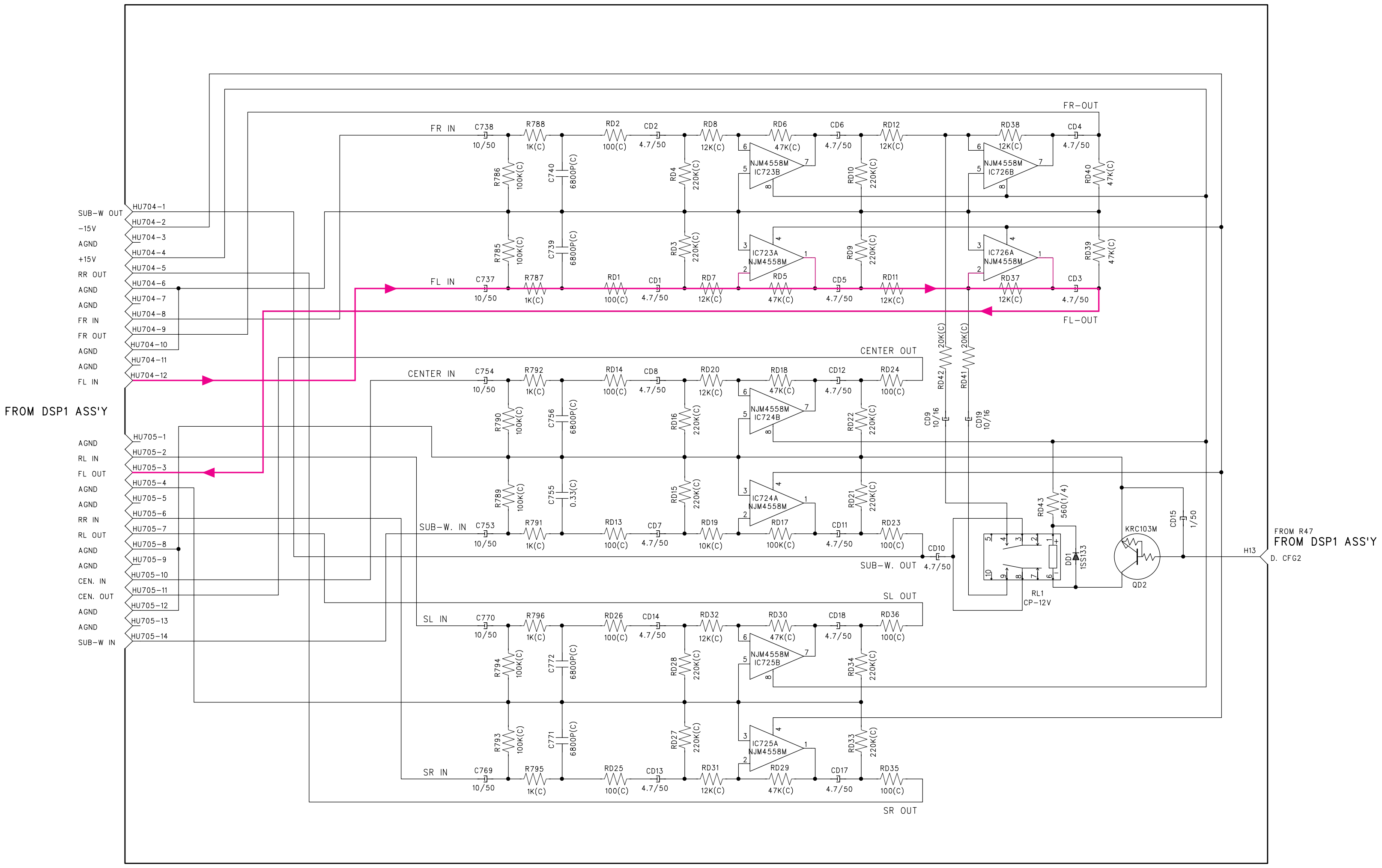
AVR-45RDS/45SG SCHEMATIC DIAGRAM (DSP1 P.C.Board)



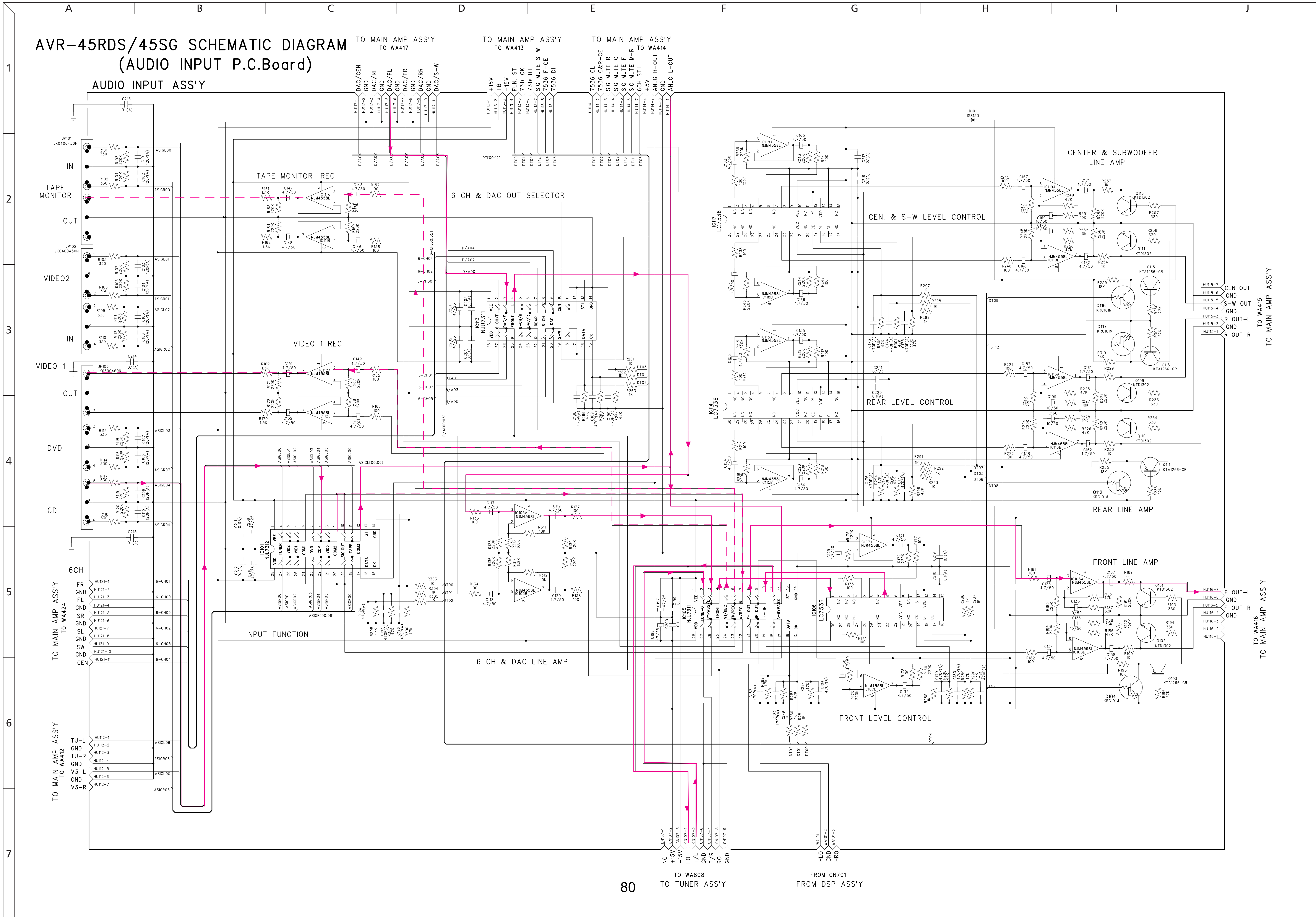
A B C D E F G H I J

AVR-45RDS/45SG SCHEMATIC DIAGRAM (DSP2 P.C.Board)

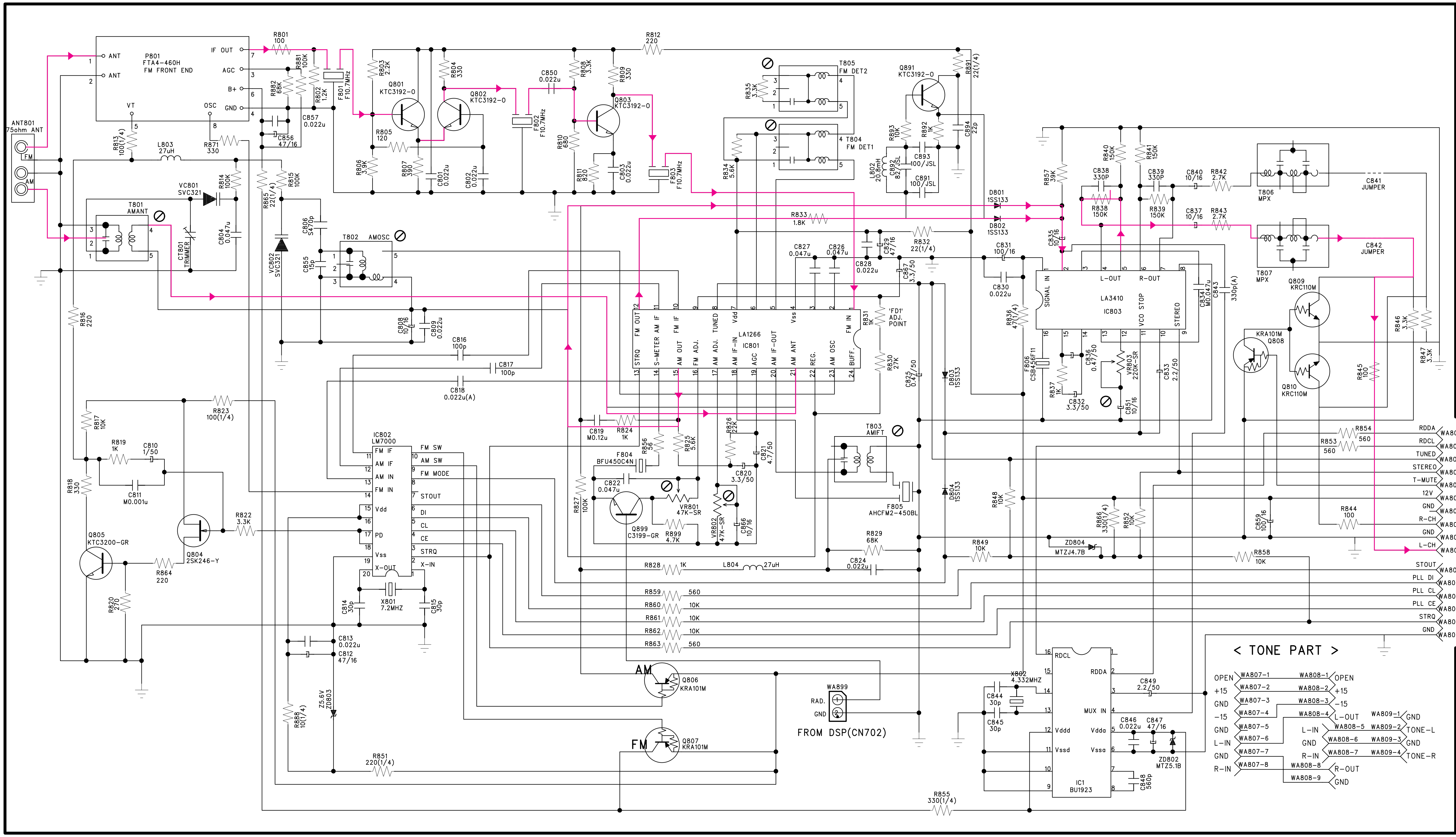
DSP2 ASS'Y



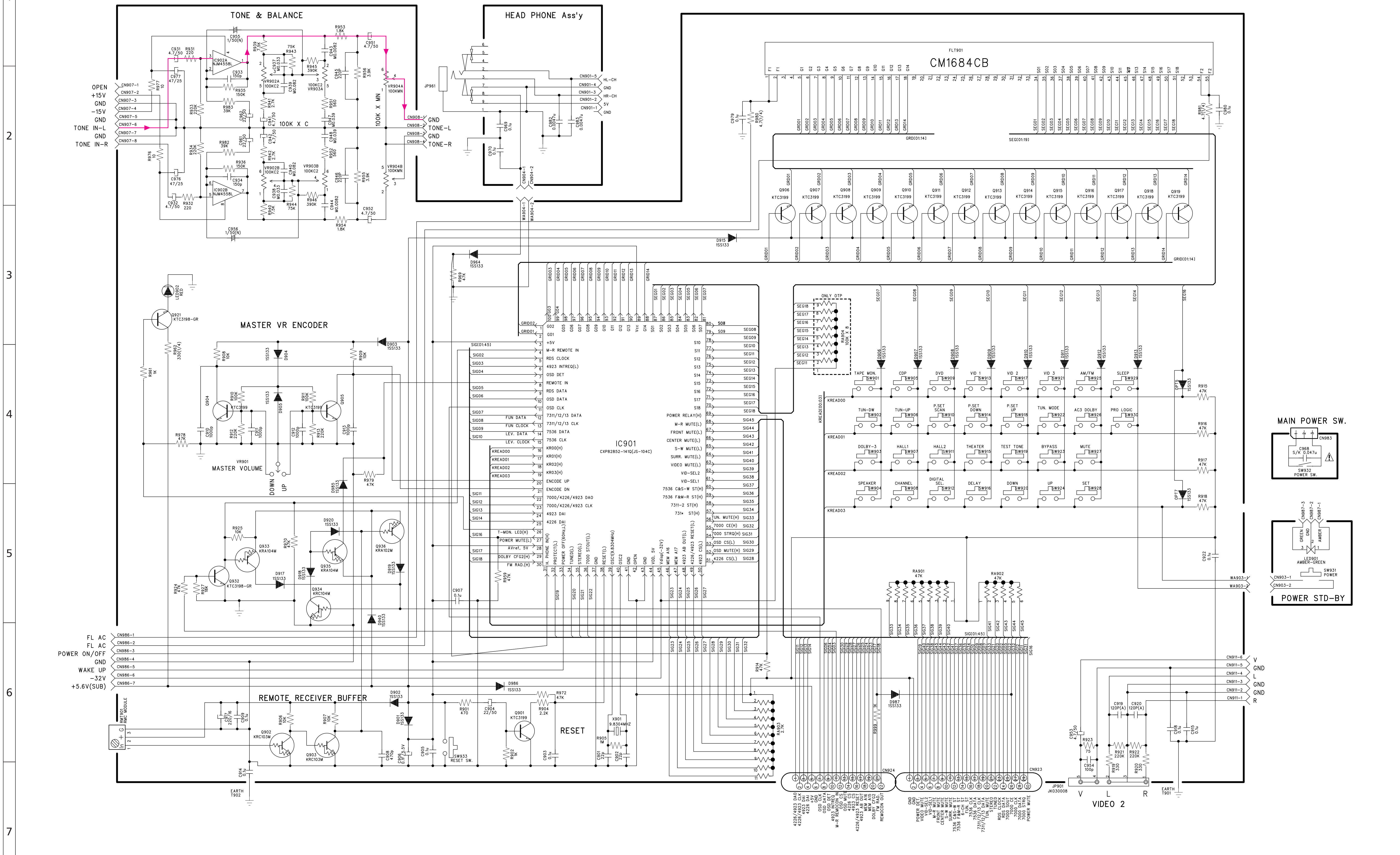
1 2 3 4 5 6 7


AVR-45RDS/45SG SCHEMATIC DIAGRAM
(AUDIO INPUT P.C.Board)
AUDIO INPUT ASS'Y
TO MAIN AMP ASS'Y
TO WA417
TO WA413
TO WA414
TAPE MONITOR
IN
OUT
VIDEO2
VIDEO 1
DVD
CD
TAPE MONITOR REC
VIDEO 1 REC
6 CH & DAC OUT SELECTOR
INPUT FUNCTION
6 CH & DAC LINE AMP
CEN. & S-W LEVEL CONTROL
CENTER & SUBWOOFER LINE AMP
REAR LEVEL CONTROL
REAR LINE AMP
FRONT LINE AMP
FRONT LEVEL CONTROL
6CH
TO MAIN AMP ASS'Y TO WA424
TO MAIN AMP ASS'Y TO WA412
TO WA415 TO MAIN AMP ASS'Y
TO WA416 TO MAIN AMP ASS'Y
CEN OUT
S-W OUT
R OUT-L
R OUT-R
F OUT-L
F OUT-R
TO WA808
TO TUNER ASS'Y
FROM CN701
FROM DSP ASS'Y

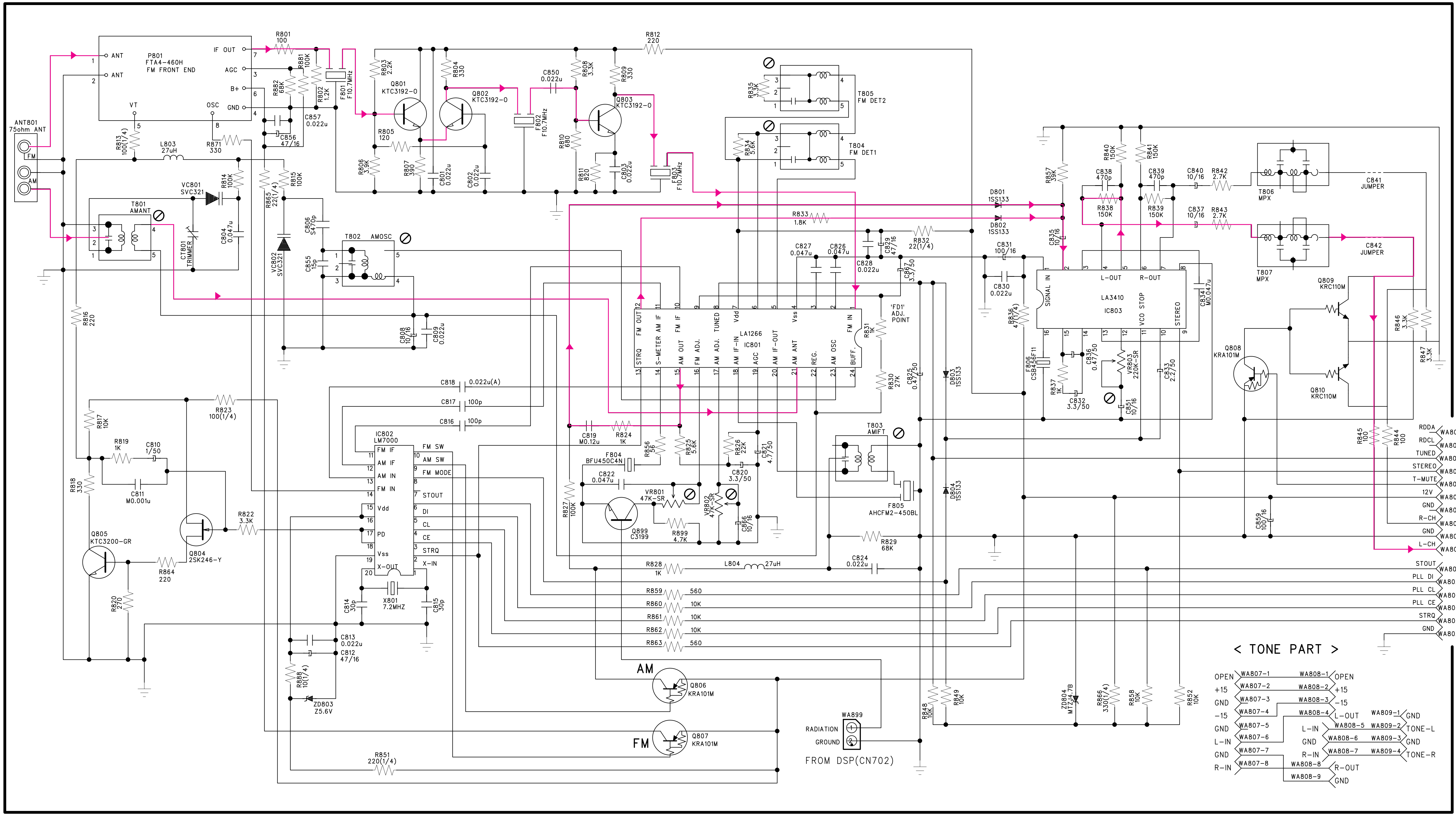
AVR-45RDS TUNER SCHEMATIC DIAGRAM (TUNER P.C.Board)



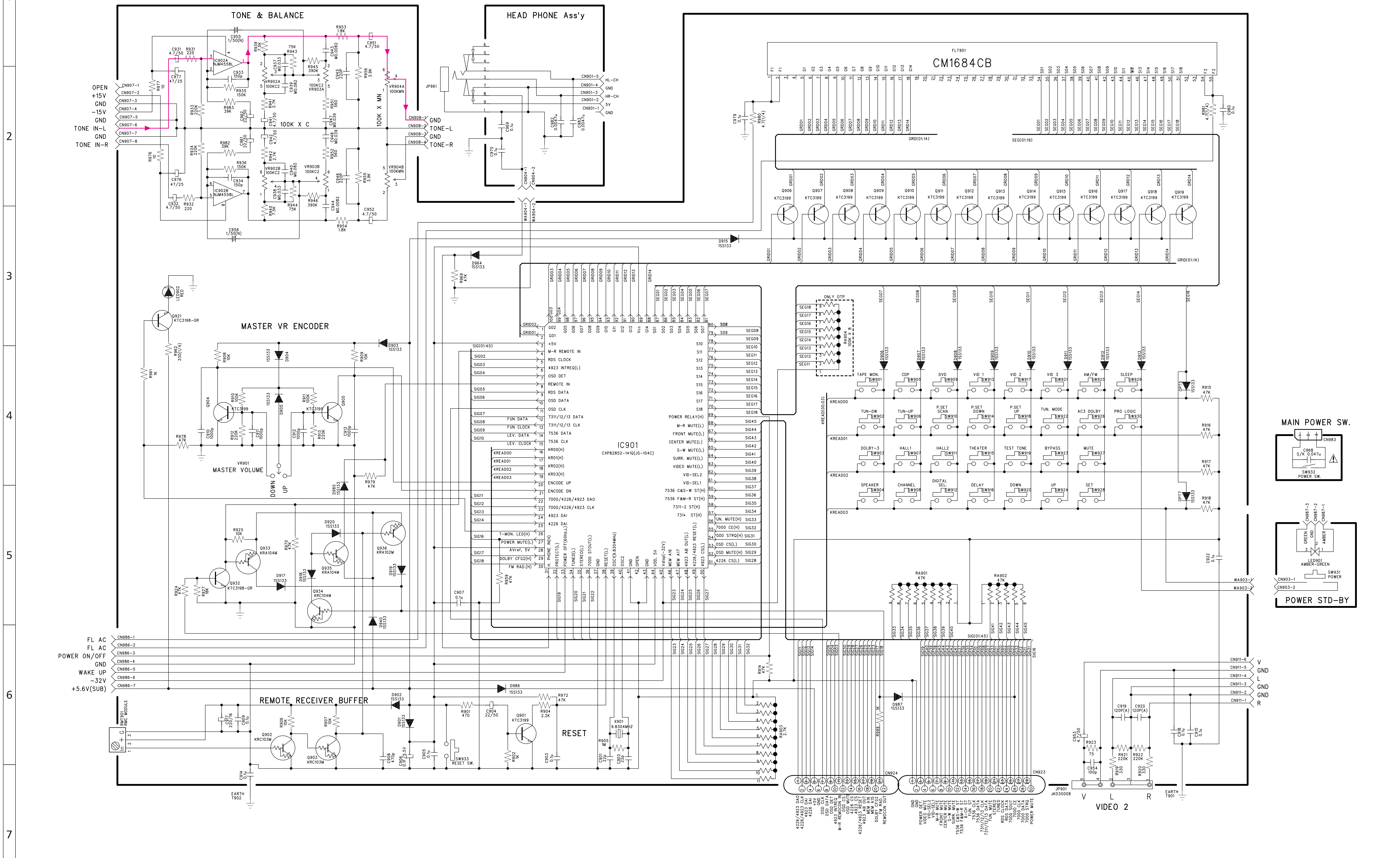
AVR-45SG u-COM & F.L.DISPLAY SCHEMATIC DIAGRAM (FRONT P.C.Board)



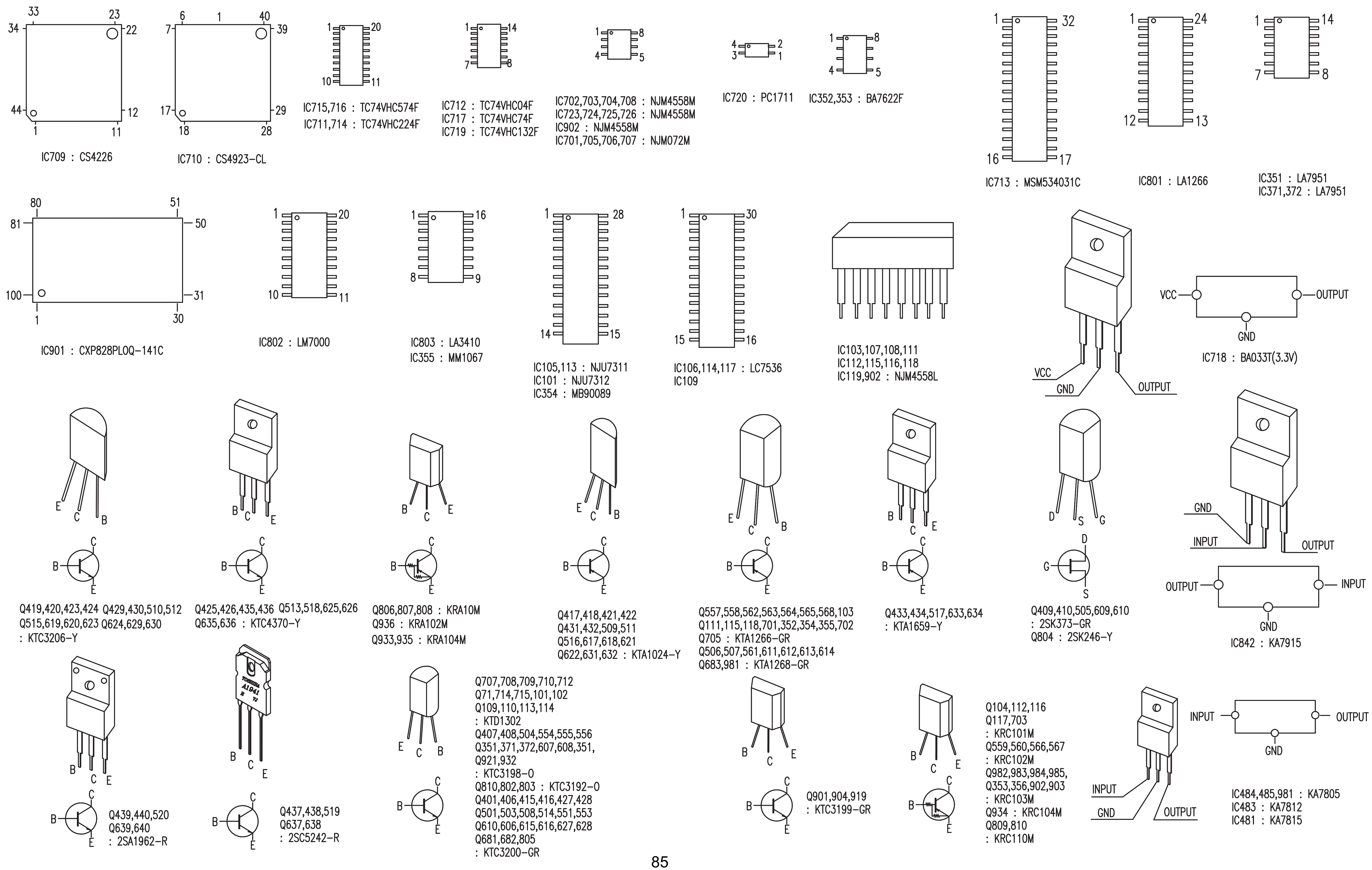
AVR-45SG TUNER SCHEMATIC DIAGRAM (TUNER P.C.Board)



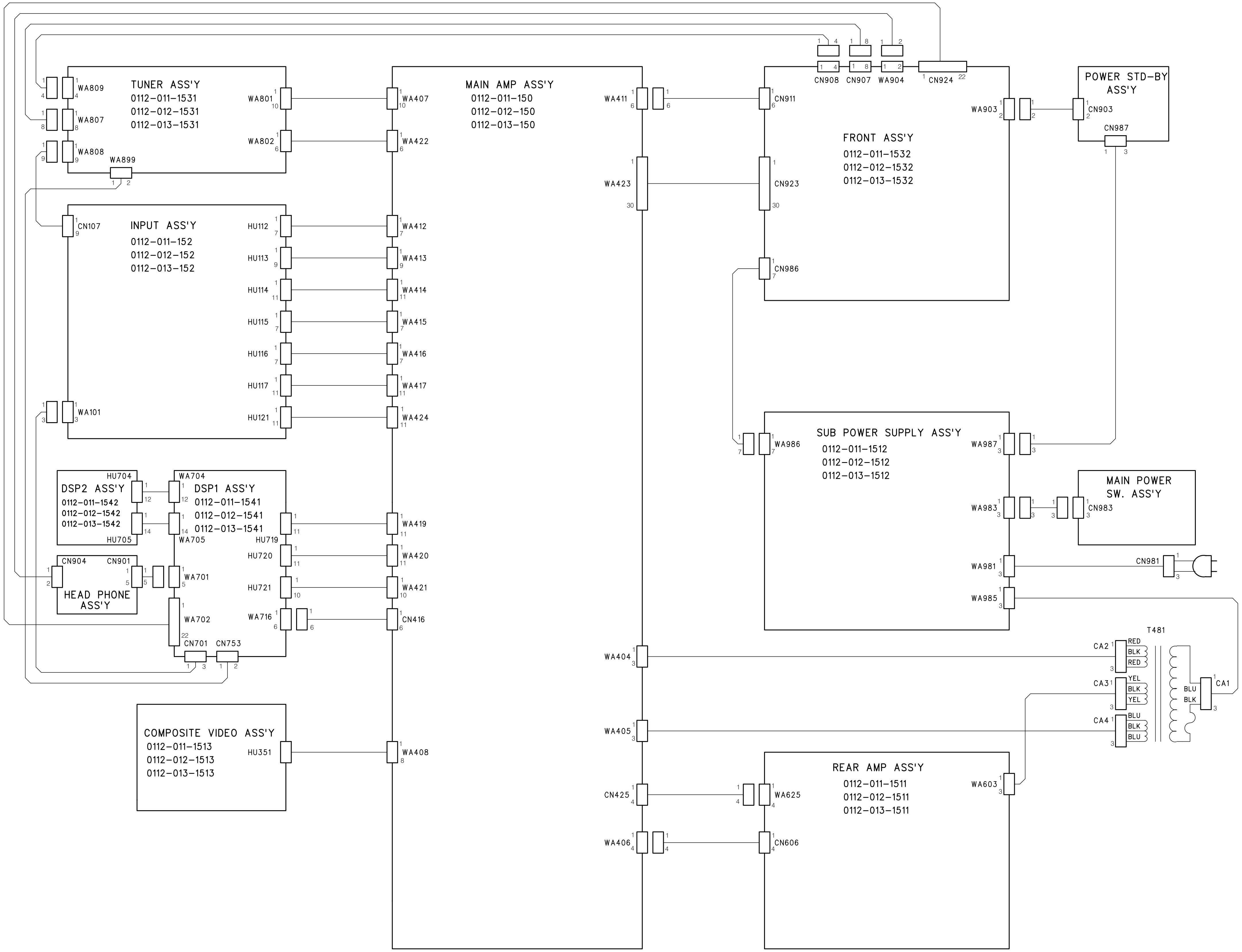
AVR-35SG u-COM & F.L.DISPLAY SCHEMATIC DIAGRAM (FRONT P.C.Board)

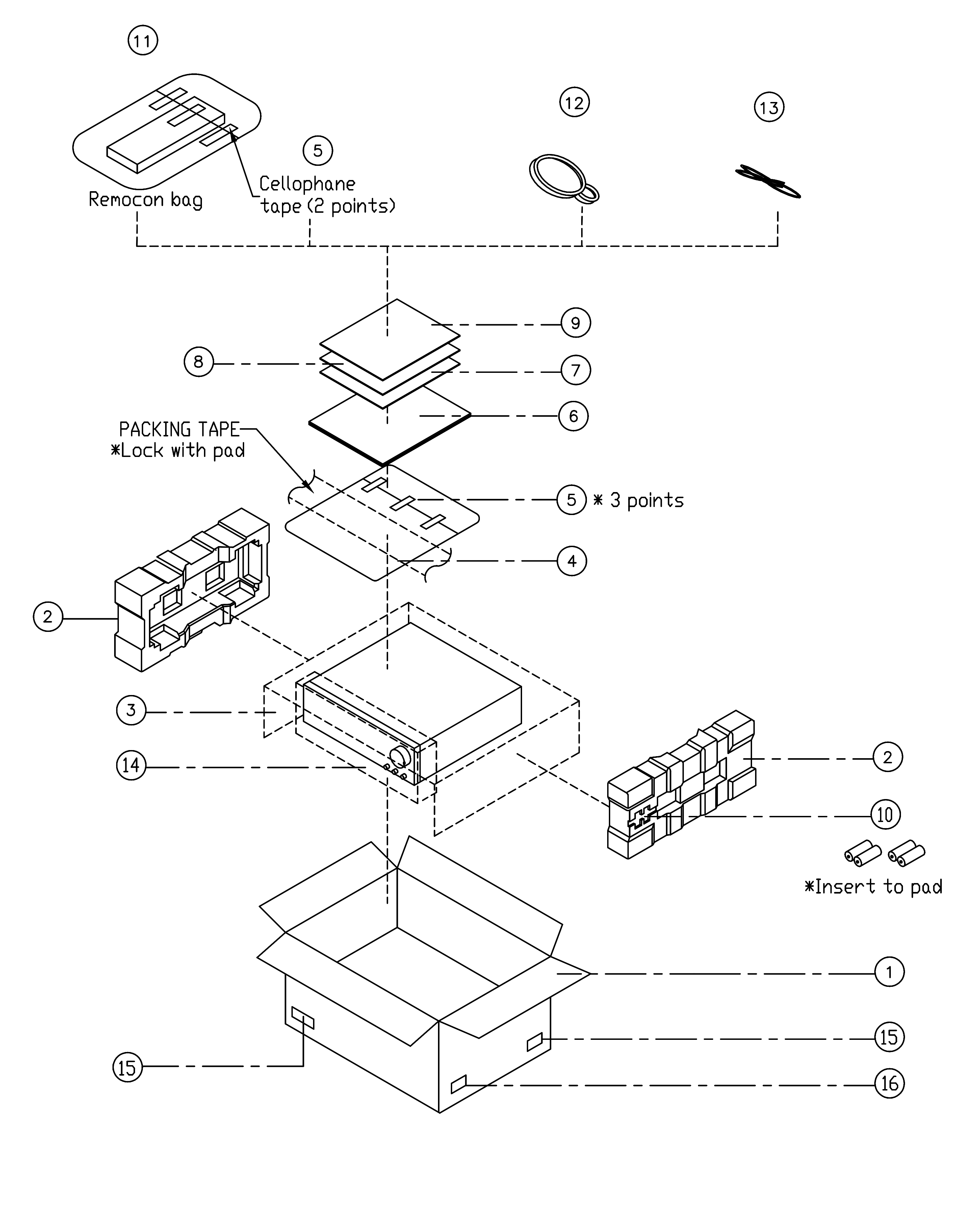


PIN CONNECTION DIAGRAM



AVR-45/45RDS/45SG WIRING DIAGRAM





*PACKING PARTS LIST

NO.	PARTS NAME	PARTS NO.	MATERIAL	Q'TY	MODEL NO.
1	MASTER CARTON	6121-003-021	DW-1, BROWN	1	AVR 45USA
		6121-006-010	DW-1, BROWN	1	AVR 45RDS
		6121-009-010	DW-1, BROWN	1	AVR 45SG
2	PAD. SIDE	6151-003-010	PS-FM50, EPS	2	
3	SHEET. POLY	6132-003-010	PE-FOAM	1	
4	BAG. POLY	6131-003-010	PE T 0.05	1	
5	TAPE. CELLOPHANE	9931-001-020		10cm	
6	INSTRUCTION MANUAL	6311-003-010	PAPER	1	AVR 45USA
		6311-006-010	PAPER	1	AVR 45RDS
		6311-009-010	PAPER	1	AVR 45SG
7	CARD. WARRANTY	6331-003-010	PAPER	1	AVR 45USA
		6331-003-010	PAPER	0	AVR 45RDS
		6331-003-010	PAPER	0	AVR 45SG
8	CARD. POST	6331-003-030	PAPER	1	AVR 45USA
		6331-003-030	PAPER	0	AVR 45RDS
		6331-003-030	PAPER	0	AVR 45SG
9	CARD. SAFETY GUARD	6331-003-020	PAPER	1	AVR 45USA
		6331-003-020	PAPER	0	AVR 45RDS
		6331-003-020	PAPER	0	AVR 45SG
10	BATTERY. ASS'Y	6453-001-002	AAA	2	
11	REMOCON ASS'Y	A0191-045-000		1	AVR 45USA
		A0191-045-001		1	AVR 45RDS
		A0191-075-001		1	AVR 45SG
12	AM LOOP ANTENNA	6457-000-012		1	
13	ANT. FM	6457-000-011		1	
14	COVER. POLY	6132-003-020	PE-FOAM	1	
15	LABEL. BARCODE	6234-003-030	PAPER	4	AVR 45USA
		6234-006-020	PAPER	4	AVR 45RDS
		6234-009-020	PAPER	4	AVR 45SG
16	LABEL. ORIGIN	6234-003-100	PAPER	1	1